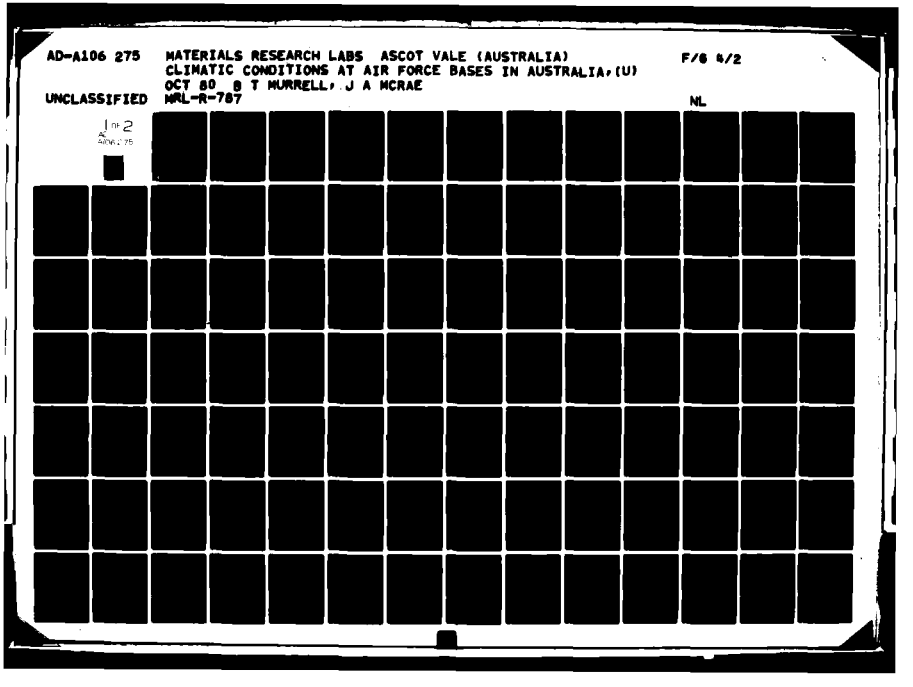
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DEPARTMENT OF DEFENCE

DEFENCE SCIENCE AND TECHNOLOGY ORGANISATION

MATERIALS RESEARCH LABORATORIES

MELBOURNE, VICTORIA

REPORT

MRL-R-787

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Barry T. Murrell and John A. McRae

Approved for Public Release

OCTOBER, 1980

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The climatic conditions at ground level expected to be encountered at Air Force bases in the Australian Region are tabulated. Mean conditions for each season and the extremes for return periods up to 1000 years are given for temperature, humidity, wind speed and rainfall of various durations as well as information about solar radiation and a number of meteorological conditions including hail, snow, frost, fog, thunder, dust and haze.

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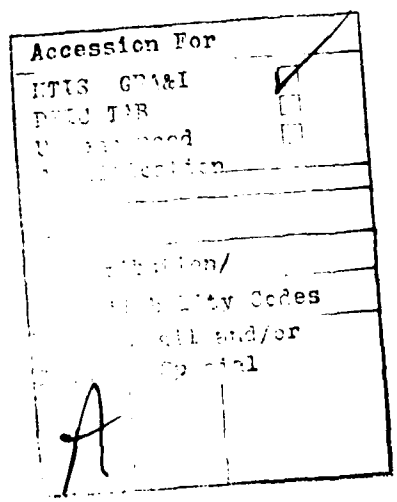

CLIMATIC CONDITIONS AT AIR FORCE BASES IN AUSTRALIA

INTRODUCTION

Air Force Research Request 10/76 (Annex A) asked that a survey be made of surface climatic conditions in areas of interest to the Air Force in the Australian region. This Report satisfies that request as far as has been possible.

Table 1 shows the geographical details of the stations for which data were available together with the periods of the records. Satisfactory data were obtained for most climatic factors at the majority of stations but solar radiation is measured at only seven of the stations and humidity was not available for Katherine (Tindall) and wind data were not complete at Katherine and Kimberley.

Two items of AFRR 10/76, (6) levels of sand and dust and (8) incidence of corrosive chemicals could not be reported. The likely levels of sand and dust are dependent not only on climatic factors but also on aspects such as ground cover that are not predictable and that are critically dependent on levels of human or animal activity. The incidence of corrosive chemicals is also largely a function of human activity and very little data on chemical fallout exist except in industrialized areas.

The Report has been set out with seasonal summaries for each station in Tables 2 to 20 and these are followed by detailed tables for each climatic factor in Tables 21 to 29. A comprehensive index has been included.

TABLE 1

DETAILS OF STATIONS USED IN THE STUDY AND THE PERIODS OF RECORDS AVAILABLE

Station	Met. Bureau Number	Latitude (South)	Longitude (East)	Elevation AMSL (metres)	Period of Record
ADELAIDE R.O.	23000	34°56'	138°35'	42.7	1887-1977 (84 yrs)
ALICE SPRINGS AERO.	15002	23°49'	133°53'	545.3	1940-1977 (37 yrs)
AMBERLEY AERO.	40004	27°38'	152°43'	24.7	1941-1977 (36 yrs)
BROOME AERO.	03003	17°57'	122°15'	11.9	1940-1977 (37 yrs)
CAIRNS AERO.	31011	16°53'	145°45'	3.0	1941-1977 (35 yrs)
CANBERRA (A) M.O.	70014	35°19'	149°12'	570.6	1939-1977 (38 yrs)
COCOS ISLAND	200284	12°11'	96°54'	3.0	1952-1977 (25 yrs)
DARWIN AERO.	14015	12°26'	130°52'	28.7	1941-1977 (36 yrs)
EAST SALE AERO.	85072	38°06'	147°08'	4.6	1943-1977 (32 yrs)
KATHERINE P.O.	14902	14°28'	132°16'	107.0	1957-1965 (8 yrs)
KIMBERLEY RESEARCH	02014	15°39'	128°43'	45.7	1965-1977 (12 yrs)
MELBOURNE R.O.	86071	37°49'	144°58'	34.7	1855-1977 (122 yrs)
ONSLOW AERO.	05017	21°40'	115°07'	3.0	1941-1975 (34 yrs)
PERTH R.O.	09034	31°57'	115°51'	18.6	1942-1977 (35 yrs)
RICHMOND AERO.	67033	33°36'	150°42'	18.9	1939-1977 (28 yrs)
TOWNSVILLE AERO.	32040	19°15'	146°46'	3.4	1940-1977 (37 yrs)
WAGGA AERO.	74112	35°10'	147°28'	214.3	1941-1975 (33 yrs)
WILLIAMTOWN AERO.	61078	32°49'	151°50'	4.0	1942-1977 (28 yrs)
WOOMERA (A) M.O.	16001	31°09'	136°48'	164.9	1949-1977 (28 yrs)

TABLES 2-20

SUMMARIES OF SEASONAL EXTREME VALUES OF METEOROLOGICAL FACTORS FOR ALL STATIONS

NOTE

The values given are for each season and will therefore be higher (or lower) than the corresponding mean daily values. Monthly means of Temperature, Relative Humidity and Rainfall can be obtained from the Bureau of Meteorology publication "Climatic Averages - Australia, Metric Edition".

TABLE 2

SUMMARY OF METEOROLOGICAL DATA FOR ADELAIDE R.O.

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	41.0	45.8	9.3	6.8	24.4	4.6	21	-4	173	4	14
AUTUMN	36.2	41.5	5.6	2.9	21.2	5.2	19	-2	291	36	27
WINTER	22.3	29.1	2.7	0.6	15.4	5.2	14	-2	404	61	47
SPRING	36.3	42.7	4.4	2.0	18.9	4.5	17	-4	254	34	32
ANNUAL	-	45.8	-	0.6					786	289	120

	Wind							
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	13.6	46.8	63.0	86.1	106	SW (13.9)	SW (20.6)	0.50
AUTUMN	11.1	47.8	66.7	86.8	124	NE (9.5)	SW (16.6)	0.50
WINTER	12.5	48.4	63.0	95.4	148	NE (11.0)	NNW (19.2)	0.82
SPRING	14.8	51.0	61.1	98.7	130	NE (15.0)	SW (19.8)	1.4
ANNUAL	13.0	-	66.7	-	148	- (12.4)	- (19.1)	3.2

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	0.05	0.14	3.6			
AUTUMN	0.55	0.77	2.3			
WINTER	2.9	1.5	1.5	No Records Available		
SPRING	0.50	1.7	3.7			
ANNUAL	4.0	4.1	13.1			

TABLE 3

SUMMARY OF METEOROLOGICAL DATA FOR ALICE SPRINGS AERO.

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	42.1	45.2	12.0	8.5	27.9	2.7	23	-10	537	5	13
AUTUMN	37.9	42.2	1.9	-2.5	24.5	3.0	21	-9	226	2	8
WINTER	30.5	34.0	-2.4	-7.5	16.1	3.0	14	-9	183	0.3	8
SPRING	40.2	42.2	2.7	-1.0	22.5	2.1	19	-13	145	4	11
ANNUAL	-	45.2	-	-7.5					783	82	40

	Wind							
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	11.4	49.6	74.1	84.0	132	E (14.7)	SE (18.7)	0.31
AUTUMN	8.4	41.2	59.3	67.1	120	SE (15.1)	SE (17.8)	0.03
WINTER	7.5	44.8	66.7	65.5	96	SE (14.6)	SE (16.6)	0.08
SPRING	11.2	51.9	74.1	87.8	107	E (15.9)	SE (16.9)	0.36
ANNUAL	9.6	-	74.1	-	132	- (15.1)	- (17.5)	0.78

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	0.11	0.08	5.8	7.20	1.04	1.27
AUTUMN	0.28	0.00	1.5	5.70	0.86	1.21
WINTER	0.81	0.03	0.64	4.61	0.74	0.95
SPRING	0.28	0.28	5.9	6.77	0.99	1.24
ANNUAL	1.5	0.39	13.8	6.07	0.91	1.27

TABLE 4

SUMMARY OF METEOROLOGICAL DATA FOR AMBERLEY AERO.

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	38.2	43.8	13.3	6.8	31.7	8.3	25	4	801	174	36
AUTUMN	34.1	38.9	2.9	-0.3	28.9	5.5	24	-1	448	33	25
WINTER	27.8	33.3	-1.1	-3.9	20.4	3.9	18	-5	427	16	18
SPRING	36.5	42.1	3.7	0.7	27.8	4.2	23	-5	410	52	26
ANNUAL	-	43.8	-	-3.9					1398	484	105

	Wind							
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	9.8	42.9	74.1	86.9	135	SE (12.9)	ENE (20.5)	0.46
AUTUMN	6.7	37.8	55.6	66.6	85	S (10.1)	E (15.7)	0.06
WINTER	6.3	41.7	64.9	71.7	91	W (14.8)	W (19.2)	0.06
SPRING	9.0	41.5	55.6	84.2	152	NW (11.3)	ENE (20.6)	0.06
ANNUAL	8.0	-	74.1	-	152	- (12.3)	- (19.0)	0.64

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	3.8	0.34	11.2			
AUTUMN	11.5	0.06	2.7			
WINTER	13.7	0.06	1.1	No Records Available		
SPRING	12.3	0.36	7.9			
ANNUAL	41.3	0.82	22.9			

TABLE 5

SUMMARY OF METEOROLOGICAL DATA FOR BROOME AERO.

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	40.8	44.8	20.5	15.2	38.7	12.8	28	11	1077	72	26
AUTUMN	39.1	42.2	12.8	8.4	37.5	6.3	28	0	440	7	13
WINTER	35.0	37.2	7.4	3.3	28.9	4.0	24	-5	217	0	5
SPRING	41.2	44.3	12.9	8.9	34.6	4.5	27	-4	64	0	3
ANNUAL	-	44.8	-	3.3					1228	139	47

	Wind							
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	13.9	52.0	85.2	101.7	161	W (14.1)	W (20.7)	0.72
AUTUMN	10.1	44.4	79.7	80.2	115	E (16.4)	W (17.3)	0.17
WINTER	10.3	40.5	55.6	62.0	85	E (17.7)	W (14.8)	0.00
SPRING	12.7	40.8	55.6	62.4	85	W (13.5)	W (21.7)	0.03
ANNUAL	11.8	-	85.2	-	161	- (15.4)	- (18.6)	0.92

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	0.17	0.08	17.4			
AUTUMN	2.0	0.00	5.8			
WINTER	9.5	0.00	0.10	No Records Available		
SPRING	5.4	0.03	1.9			
ANNUAL	17.1	0.11	25.2			

TABLE 6

SUMMARY OF METEOROLOGICAL DATA FOR CAIRNS AERO.

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	36.2	40.4	19.8	17.1	34.1	17.0	26	15	1984	372	53
AUTUMN	33.5	37.3	14.6	10.1	32.7	11.7	26	9	1448	213	55
WINTER	29.1	30.6	10.5	6.2	26.7	7.6	22	3	258	21	28
SPRING	33.9	37.2	14.4	11.1	30.8	9.7	25	7	428	21	25
ANNUAL	-	40.4	-	6.2					3083	928	161

	Wind*						
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	9.2	36.5	59.3	66.6	106	S (10.9)	NE (13.8)	0.09
AUTUMN	12.9	41.2	74.1	67.2	111	S (14.9)	SE (20.6)	0.14
WINTER	14.0	38.5	48.2	61.1	91	S (16.3)	SE (21.0)	0.00
SPRING	11.7	39.3	53.7	63.8	91	S (13.0)	SE (23.3)	0.00
ANNUAL	12.0	-	74.1	-	111	- (13.6)	- (19.7)	0.23

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	0.11	0.00	7.7			
AUTUMN	0.26	0.00	1.8			
WINTER	0.31	0.00	0.03	No Records Available		
SPRING	0.23	0.14	1.9			
ANNUAL	0.91	0.14	11.4			

* Does not include winds associated with tropical cyclones

TABLE 7

SUMMARY OF METEOROLOGICAL DATA FOR CANBERRA (A) M.O.

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	36.5	42.2	3.7	1.1	23.0	3.5	20	-7	477	40	23
AUTUMN	30.8	36.4	-4.0	-7.5	20.3	3.8	18	-6	468	24	23
WINTER	18.1	21.7	-6.5	-10.5	13.3	2.9	11	-9	247	40	32
SPRING	30.9	38.8	-3.2	-5.6	18.9	3.4	17	-7	304	46	31
ANNUAL	-	42.2	-	-10.5					1063	305	109

	Wind							
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	9.8	49.5	74.1	88.1	120	NW (17.0)	NW (19.4)	0.37
AUTUMN	8.1	47.0	74.1	80.1	111	NW (19.7)	NW (18.2)	0.14
WINTER	10.3	53.5	92.6	84.0	113	NW (22.2)	NW (21.4)	0.45
SPRING	11.2	53.5	72.3	92.1	128	NW (20.4)	NW (22.6)	0.39
ANNUAL	9.9	-	92.6	-	128	- (19.8)	- (20.4)	1.4

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	2.9	0.91	9.1			
AUTUMN	14.7	0.35	2.7			
WINTER	19.8	1.0	1.1	No Records Available		
SPRING	8.7	2.0	6.2			
ANNUAL	46.1	4.3	19.1			

TABLE 8

SUMMARY OF METEOROLOGICAL DATA FOR COCOS ISLAND

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	31.2	32.3	21.9	20.1	33.4	19.9	26	18	1037	86	-
AUTUMN	31.1	32.2	21.8	19.4	33.9	20.7	26	18	1229	234	-
WINTER	29.6	30.7	20.9	18.3	32.5	18.3	26	16	1375	132	-
SPRING	30.1	31.1	21.1	19.3	32.2	18.4	25	16	1243	36	-
ANNUAL	-	32.3	-	18.3					3289	1101	-

	Wind							
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	18.6	46.4	64.9	78.2	122	SE (23.2)	SE (23.1)	0.40
AUTUMN	21.4	51.3	66.7	77.9	102	SE (25.9)	SE (25.1)	0.52
WINTER	26.6	52.0	59.3	80.5	103	SE (30.8)	SE (30.2)	0.04
SPRING	27.3	49.7	64.9	73.2	93	ESE (30.2)	ESE (29.6)	0.16
ANNUAL	23.5	-	66.7	-	122	- (27.5)	- (27.0)	1.1

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	0.04	0.00	1.8			
AUTUMN	0.00	0.00	3.1			
WINTER	0.04	0.00	0.56	No Records Available		
SPRING	0.00	0.00	0.08			
ANNUAL	0.08	0.00	5.5			

TABLE 9

SUMMARY OF METEOROLOGICAL DATA FOR DARWIN AERO.

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	35.1	37.1	20.9	17.2	35.5	18.7	27	16	1516	531	49
AUTUMN	34.8	36.3	17.5	14.2	34.7	9.4	27	6	687	129	30
WINTER	34.1	37.0	14.3	10.4	29.1	4.6	24	-4	85	0	2
SPRING	36.1	37.2	19.6	16.7	34.5	6.2	27	0	548	33	20
ANNUAL	-	37.2	-	10.4	-	-	-	-	2644	1025	101

	Wind*							
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	11.3	44.3	120.4	83.2	106	W (15.2)	NW (18.1)	0.14
AUTUMN	9.7	42.7	64.9	72.4	91	SE (12.2)	NW (15.2)	0.03
WINTER	10.3	38.9	55.6	57.1	67	SE (14.0)	NW (16.7)	0.0
SPRING	10.3	38.0	51.9	78.0	117	E (10.3)	NW (19.2)	0.03
ANNUAL	10.4	-	120.4	-	117	- (12.9)	- (17.3)	0.20

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	0.14	0.03	28	5.62	0.95	1.22
AUTUMN	0.14	0.00	10	5.53	0.89	1.23
WINTER	1.5	0.00	0.06	5.51	0.83	0.97
SPRING	0.3	0.03	12	6.49	0.99	1.25
ANNUAL	2.1	0.06	50.1	5.79	0.92	1.25

* Does not include winds associated with tropical cyclones

TABLE 10

SUMMARY OF METEOROLOGICAL DATA FOR EAST SALE AERO.

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	39.4	45.6	5.2	2.2	25.2	6.9	21	2	286	59	28
AUTUMN	32.6	39.8	0.2	-2.8	22.5	6.2	19	0	328	47	36
WINTER	20.9	24.5	-2.7	-5.8	14.9	4.7	13	-3	325	49	45
SPRING	32.0	36.8	-0.0	-3.7	20.4	5.5	18	-1	279	91	44
ANNUAL	-	45.6	-	-5.8					943	328	153

	Wind							
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	13.9	58.8	88.9	97.4	122	W (20.2)	E (23.3)	1.1
AUTUMN	11.1	57.7	85.2	89.6	104	W (17.2)	E (16.8)	0.88
WINTER	11.6	60.6	92.6	97.3	132	W (17.1)	W (24.9)	1.6
SPRING	14.0	61.7	92.6	100.6	119	W (23.3)	W (29.3)	1.9
ANNUAL	12.7	-	92.6	-	132	- (19.5)	- (23.6)	5.5

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	10.8	0.15	5.4			
AUTUMN	22.5	0.21	1.8			
WINTER	22.2	0.53	0.32	No Records Available		
SPRING	15.8	0.68	2.9			
ANNUAL	71.3	1.6	10.4			

TABLE 11

SUMMARY OF METEOROLOGICAL DATA FOR KATHERINE P.O.

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	39.9	43.3	19.4	16.7	37.0	12.8	28	11	772	294	39
AUTUMN	37.2	39.2	10.4	7.2	37.1	6.8	28	2	478	17	13
WINTER	35.9	37.3	5.7	2.8	25.2	3.5	21	-7	42	0	0
SPRING	41.3	45.6	13.3	9.8	32.8	4.3	26	-4	264	17	11
ANNUAL	-	45.6	-	2.8					1302	407	63

	Wind							
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	4.1	32.5	46.3	-	-	NW (8.7)	NW (9.6)	0.00
AUTUMN	6.5	34.8	46.3	-	-	E (11.2)	E (13.1)	0.00
WINTER	7.1	40.3	55.6	-	-	E (12.6)	E (11.9)	0.00
SPRING	5.5	31.5	46.3	-	-	NW (7.9)	E (11.3)	0.13
ANNUAL	5.8	-	55.6	-	-	- (10.1)	- (11.5)	0.13

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	0.00	0.00	4.8			
AUTUMN	0.00	0.00	0.75			
WINTER	0.13	0.00	0.00	No Records Available		
SPRING	0.00	0.00	2.1			
ANNUAL	0.13	0.00	7.7			

TABLE 12

SUMMARY OF METEOROLOGICAL DATA FOR KIMBERLEY RESEARCH

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	41.8	43.4	19.9	16.8	34.8	15.1	27	13	793	266	37
AUTUMN	38.2	40.5	11.7	8.1	32.2	6.1	25	0	414	49	12
WINTER	36.6	38.4	8.1	4.4	25.8	3.7	22	-6	78	0	0
SPRING	42.2	44.4	13.5	10.6	31.1	4.4	25	-4	331	19	12
ANNUAL	-	44.4	-	4.4					1403	526	61

	Wind						
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	6.8	29.9	51.9	-	-	NW (8.3)	-	0.17
AUTUMN	10.0	40.6	51.9	-	-	SE (14.1)	-	0.00
WINTER	10.0	41.7	48.2	-	-	SE (14.4)	-	0.00
SPRING	9.8	37.4	50.0	-	-	E (10.7)	-	0.17
ANNUAL	9.2	-	51.9			- (11.9)		0.34

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	0.25	0.17	29.8			
AUTUMN	0.17	0.00	8.3			
WINTER	0.17	0.00	0.17	No Records Available		
SPRING	0.08	0.25	9.9			
ANNUAL	0.67	0.42	48.2			

TABLE 13

SUMMARY OF METEOROLOGICAL DATA FOR MELBOURNE R.O.

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	40.2	45.6	7.5	4.4	25.1	6.4	21	1	361	46	27
AUTUMN	34.7	41.7	2.7	-1.1	21.4	6.1	19	0	324	58	35
WINTER	20.6	25.0	-0.3	-2.7	14.8	5.3	13	-2	286	75	45
SPRING	34.0	40.9	2.0	-0.5	19.4	5.6	17	-1	451	68	41
ANNUAL	-	45.6	-	-2.7					968	332	148

	Wind						
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	12.2	43.5	51.9	83.8	95	N (20.4)	S (18.7)	0.09
AUTUMN	10.8	44.7	59.3	83.6	96	N (16.5)	S (14.6)	0.23
WINTER	12.4	47.3	59.3	94.5	107	N (17.0)	NNW (23.3)	0.27
SPRING	12.9	47.0	66.7	91.0	111	N (20.9)	S (16.3)	0.32
ANNUAL	12.1	-	66.7	-	111	- (18.7)	- (18.3)	0.91

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	0.59	0.64	4.1	6.29	0.91	1.16
AUTUMN	4.3	0.55	2.0	3.12	0.56	0.98
WINTER	8.4	1.4	0.82	1.95	0.41	0.70
SPRING	1.7	1.6	3.2	4.65	0.76	1.14
ANNUAL	15.0	4.2	10.1	4.00	0.66	1.16

TABLE 14

SUMMARY OF METEOROLOGICAL DATA FOR ONSLOW AERO.

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	45.7	48.1	18.1	16.3	37.8	6.3	31	0	616	0	8
AUTUMN	42.3	45.7	11.7	7.5	36.3	6.7	29	1	429	9	9
WINTER	31.2	34.8	7.0	3.5	26.4	4.3	24	-4	312	0.3	10
SPRING	41.6	44.6	11.0	8.4	30.4	3.9	29	-6	62	0	2
ANNUAL	-	48.1	-	3.5					1084	26	29

	Wind*							
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	18.6	56.1	107.5	88.8	150	S (19.6)	W (30.7)	2.0
AUTUMN	14.3	54.4	92.6	89.5	152	SE (15.8)	NW (17.5)	1.0
WINTER	13.4	44.1	57.4	64.5	102	SE (15.6)	N (17.4)	0.09
SPRING	19.0	47.9	70.4	66.9	98	S (21.8)	W (29.6)	0.26
ANNUAL	16.3	-	107.5	-	152	- (18.3)	- (23.8)	3.3

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	0.14	0.03	7.5			
AUTUMN	0.74	0.00	4.0			
WINTER	0.99	0.00	0.15	No Records Available		
SPRING	0.61	0.00	0.55			
ANNUAL	2.5	0.03	12.2			

* Does not include winds associated with tropical cyclones

TABLE 15

SUMMARY OF METEOROLOGICAL DATA FOR PERTH R.O.

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	40.5	44.7	11.0	8.6	25.8	6.3	22	0	180	1	10
AUTUMN	37.3	41.0	6.6	3.0	24.9	6.0	21	0	372	64	26
WINTER	24.1	28.1	3.7	1.6	19.3	5.9	17	-1	957	260	52
SPRING	35.3	39.9	5.3	2.6	20.8	5.7	18	-1	364	35	31
ANNUAL	-	44.7	-	1.6					1339	509	119

	Wind							
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	15.7	42.4	55.6	74.4	103	E (19.1)	SW (23.5)	0.17
AUTUMN	12.4	46.0	74.1	91.4	119	E (17.0)	SW (18.5)	0.66
WINTER	12.2	52.1	77.8	108.8	156	NE (10.7)	W (19.4)	2.0
SPRING	14.0	48.8	72.3	91.0	117	E (16.2)	SW (21.2)	1.0
ANNUAL	13.6	-	77.8	-	156	- (15.8)	- (20.7)	3.8

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	0.86	0.06	2.1	7.48	1.02	1.19
AUTUMN	3.5	0.26	3.8	4.50	0.72	0.99
WINTER	3.8	1.5	4.8	2.75	0.53	0.79
SPRING	2.1	0.69	2.2	5.79	0.89	1.13
ANNUAL	10.3	2.5	12.9	5.13	0.79	1.19

* Does not include winds associated with tropical cyclones

TABLE 16

SUMMARY OF METEOROLOGICAL DATA FOR RICHMOND AERO.

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	40.6	43.9	10.1	6.1	28.9	6.5	24	1	661	40	41
AUTUMN	34.6	40.1	1.0	-1.3	26.1	5.6	22	-1	530	65	27
WINTER	25.7	32.8	-2.5	-8.3	17.1	3.8	15	-6	321	20	23
SPRING	36.8	41.1	1.9	-1.2	24.2	4.1	21	-5	480	51	32
ANNUAL	-	43.9	-	-8.3					1466	308	123

	Wind						
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	7.3	46.0	64.9	89.3	135	S (14.0)	SE (17.5)	0.62
AUTUMN	5.5	42.5	59.3	75.0	122	SSW (14.7)	SE (15.5)	0.13
WINTER	6.5	51.3	72.3	82.9	126	SSW (17.2)	W (25.0)	0.60
SPRING	8.7	54.6	74.1	92.9	117	S (14.1)	SE (16.5)	0.43
ANNUAL	7.0	-	74.1	-	135	- (15.0	- (18.6)	1.8

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	6.0	0.36	7.4			
AUTUMN	21.0	0.13	2.6			
WINTER	20.5	0.07	0.93	No Records Available		
SPRING	12.6	0.23	6.3			
ANNUAL	60.1	0.79	17.2			

TABLE 17

SUMMARY OF METEOROLOGICAL DATA FOR TOWNSVILLE AERO.

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	35.9	42.7	20.0	17.9	35.3	14.5	27	13	1701	198	43
AUTUMN	33.2	37.3	10.6	6.2	33.2	7.3	26	3	834	47	29
WINTER	30.1	33.3	6.3	1.1	26.1	4.1	22	-5	211	0.3	10
SPRING	34.9	41.0	11.7	8.2	31.1	5.0	25	-3	353	6	13
ANNUAL	-	42.7	-	1.1					2196	464	95

	Wind*							
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	11.1	41.9	63.0	74.6	115	SE (11.8)	NE (20.4)	0.11
AUTUMN	9.5	39.0	55.6	69.4	143	SE (11.9)	NE (18.9)	0.11
WINTER	9.1	37.7	46.3	60.4	85	SE (10.1)	NE (18.8)	0.06
SPRING	13.0	40.4	55.6	63.7	83	E (17.2)	NE (23.6)	0.00
ANNUAL	10.7	-	63.0	-	143	- (12.8)	- (20.4)	0.28

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	0.31	0.08	7.9			
AUTUMN	1.2	0.03	1.9			
WINTER	6.5	0.00	0.08	No Records Available		
SPRING	1.8	0.06	2.7			
ANNUAL	9.8	0.17	12.6			

* Does not include winds associated with tropical cyclones

TABLE 18

SUMMARY OF METEOROLOGICAL DATA FOR WAGGA AERO.

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	40.2	44.6	6.4	3.4	26.1	3.7	22	-6	262	9	20
AUTUMN	34.1	39.3	-0.3	-4.4	22.1	4.7	19	-3	437	38	22
WINTER	20.2	23.1	-3.0	-5.4	15.6	4.4	14	-4	238	38	32
SPRING	35.0	41.6	-0.8	-3.8	21.2	4.3	18	-4	288	20	30
ANNUAL	-	44.6	-	-5.4					989	225	104

	Wind						
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	11.7	48.8	74.1	86.4	135	ENE (15.7)	W (20.5)	0.12
AUTUMN	8.3	44.3	63.0	76.9	145	E (10.4)	W (16.1)	0.18
WINTER	7.6	45.6	64.9	79.1	150	E (8.2)	W (16.9)	0.21
SPRING	10.6	45.6	77.8	88.8	139	E (10.9)	WSW (21.2)	0.48
ANNUAL	9.6	-	77.8	-	150	- (11.3)	- (18.7)	0.99

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	0.15	0.27	6.1	7.25	1.00	1.21
AUTUMN	4.9	0.06	2.3	4.08	0.68	1.07
WINTER	16.7	0.85	1.1	2.54	0.49	0.84
SPRING	5.5	0.91	5.5	5.66	0.86	1.31
ANNUAL	27.3	2.1	15.0	4.88	0.76	1.31

TABLE 19

SUMMARY OF METEOROLOGICAL DATA FOR WILLIAMTOWN AERO.

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	39.1	44.1	10.7	8.3	29.5	7.0	24	2	644	101	36
AUTUMN	33.3	39.4	4.1	-0.6	26.7	5.6	22	-1	959	57	33
WINTER	24.9	29.6	0.5	-3.9	17.7	4.5	16	-4	651	52	32
SPRING	36.0	42.6	3.7	1.1	24.2	4.6	21	-4	383	42	31
ANNUAL	-	44.1	-	-3.9					1794	687	132

	Wind						
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	12.7	52.5	77.8	90.1	137	S (19.9)	SE (18.1)	0.38
AUTUMN	10.5	53.3	74.1	97.0	148	WNW (16.5)	SE (14.8)	0.48
WINTER	13.3	64.6	114.9	96.0	154	WNW (19.6)	WNW (27.9)	2.3
SPRING	13.2	61.7	83.4	94.0	109	WNW (20.4)	SE (17.1)	1.2
ANNUAL	12.4	-	114.9	-	154	- (19.1)	- (19.5)	4.4

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	5.4	0.34	8.9	6.42	0.95	1.21
AUTUMN	10.4	0.07	3.5	4.16	0.71	1.07
WINTER	8.9	0.17	2.0	3.02	0.49	0.90
SPRING	7.0	0.31	6.9	5.37	0.84	1.20
ANNUAL	31.7	0.89	21.3	4.74	0.75	1.21

TABLE 20

SUMMARY OF METEOROLOGICAL DATA FOR WOOMERA (A) M.O.

	Seasonal Temperatures				Absolute Humidity				Seasonal Rainfall (mm)		
	Extreme Air Temperatures (C)				Water Vapour Pressure (mb)		Dew Points (C)				
	Mean Max	Highest Recorded	Mean Min	Lowest Recorded	Mean Max	Mean Min	Mean Max	Mean Min	Highest Recorded	Lowest Recorded	Mean No. of Days of Rain
SUMMER	43.4	47.6	10.9	8.3	26.5	2.6	22	-10	169	1	8
AUTUMN	37.5	42.5	4.4	-0.3	22.3	3.6	19	-6	160	1	11
WINTER	26.9	32.2	1.1	-1.4	16.0	3.2	14	-8	142	7	17
SPRING	40.0	44.4	4.0	1.8	19.3	2.0	17	-13	125	4	13
ANNUAL	-	47.6	-	-1.4					493	92	49

	Wind							
	10 Min Average Speed			Gust Speed		Prevailing Direction and Mean Speed (km/hr)		Mean No. of Days of Gales
	Mean (km/hr)	Mean Max (km/hr)	Highest (km/hr)	Mean Max (km/hr)	Highest (km/hr)	9 am	3 pm	
SUMMER	17.6	56.4	70.4	96.4	115	SE (20.7)	S (21.7)	0.61
AUTUMN	13.0	51.6	83.4	74.5	111	SE (17.4)	SW (18.6)	0.25
WINTER	12.7	54.5	66.7	85.8	126	N (15.6)	N (21.6)	0.29
SPRING	17.4	59.8	72.3	104.9	159	SE (17.7)	SW (23.8)	1.5
ANNUAL	15.2	-	83.4	-	159	- (17.9)	- (21.4)	2.7

	Fog, Hail, Thunder			Solar Radiation		
	Mean No. of Days of Fog	Mean No. of Days of Hail	Mean No. of Days of Thunder	Mean Daily Total (kWh/m^2)	Mean Daily Max Intensity (kW/m^2)	Highest Recorded Intensity (kW/m^2)
SUMMER	0.21	0.07	3.4	7.72	1.04	1.22
AUTUMN	1.3	0.00	1.4	4.81	0.75	1.14
WINTER	2.4	0.14	1.1	3.39	0.59	0.94
SPRING	0.18	0.11	3.5	6.37	0.91	1.18
ANNUAL	4.1	0.32	9.4	5.57	0.82	1.22

EXTREME TEMPERATURES

Tables 21 and 22 give the daily maximum and minimum temperatures, respectively, that can be expected to be experienced once in the quoted return periods for all stations, together with the means of the maximum and minimum temperatures recorded in each season and the highest and lowest temperatures measured in the period of record (Table 1).

The probability (P) that a temperature corresponding to a return period of T years will be experienced any one year is given by:

$$P\ (\%) = (1 - {}^{1}/T) \times 100$$

The figures were obtained from daily maximum and minimum temperatures collected during the periods shown opposite each station in Table 1 using the Jenkinson equation (Annex B).

TABLES 21 AND 22

EXTREME TEMPERATURES LIKELY TO BE EXPERIENCED FOR EACH SEASON AND ANNUALLY FOR ALL STATIONS

NOTE

The temperatures given are those experienced once in each season or year and are therefore higher (or lower) than the corresponding mean daily values. Mean maximum and minimum temperatures for each month are available in the Bureau of Meteorology publication "Climatic Averages - Australia, Metric Edition".

TABLE 21a

EXTREME MAXIMUM TEMPERATURES (SUMMER)

Seasonal Maximum Temperatures (°C) that can be expected to be exceeded once in the given return periods together with mean maximum and highest recorded temperatures for each station.

Station	Return Period						Mean Max.	Highest Recorded
	2 Year	10 Year	25 Year	50 Year	100 Year	1000 Year		
ADELAIDE R.O.	40.9	43.3	44.0	44.5	44.8	45.6	41.0	45.8
ALICE SPRINGS AERO.	42.1	43.9	44.5	44.8	45.1	45.7	42.1	45.2
AMBERLEY AERO.	37.9	41.3	42.8	43.9	44.9	47.9	38.2	43.8
BROOME AERO.	40.8	42.9	44.1	45.0	45.9	48.8	40.8	44.8
CAIRNS AERO.	36.1	38.7	39.8	40.5	41.1	42.7	36.2	40.4
CANBERRA (A) M.O.	36.5	39.6	40.6	41.2	41.6	42.7	36.5	52.2
COCOS ISLAND	31.1	31.9	32.2	32.4	32.6	33.0	31.2	32.3
DARWIN AERO.	35.1	36.3	36.8	37.2	37.5	38.4	35.1	37.1
EAST SALE AERO.	39.5	42.5	43.5	44.1	44.6	45.6	39.4	45.6
KATHERINE P.O.	39.6	41.8	43.0	43.9	44.9	48.3	39.9	43.3
KIMBERLEY RESEARCH	41.8	43.2	43.8	44.1	44.4	45.2	41.8	43.4
MELBOURNE R.O.	40.1	42.8	43.8	44.4	44.9	46.0	40.2	45.6
ONSLOW AERO.	45.8	47.3	47.6	47.8	47.9	48.1	45.7	48.1
PERTH R.O.	40.5	42.6	43.3	43.7	44.0	44.6	40.5	43.7
RICHMOND AERO.	40.9	43.2	43.8	44.0	44.2	44.4	40.6	43.9
TOWNSVILLE AERO.	35.4	38.9	40.8	42.3	43.8	46.1	35.9	42.7
WAGGA AERO.	40.2	43.0	43.9	44.4	44.8	45.7	40.2	44.6
WILLIAMTOWN AERO.	39.3	42.6	43.5	44.0	44.4	45.1	39.1	44.1
WOOMERA (A) M.O.	43.4	45.6	46.2	46.5	46.8	47.3	43.4	47.6

TABLE 21b

EXTREME MAXIMUM TEMPERATURES (AUTUMN)

Seasonal Maximum Temperatures (°C) that can be expected to be exceeded once in the given return periods together with mean maximum and highest recorded temperatures for each station.

Station	Return Period						Mean Max.	Highest Recorded
	2 Year	10 Year	25 Year	50 Year	100 Year	1000 Year		
ADELAIDE R.O.	36.0	39.1	40.3	41.0	41.7	43.3	36.2	41.5
ALICE SPRINGS AERO.	38.0	40.8	41.6	42.0	42.4	43.0	37.9	42.2
AMBERLEY AERO.	33.9	36.5	37.7	38.5	39.2	41.3	34.1	38.9
BROOME AERO.	39.1	40.8	41.4	41.8	42.1	42.7	39.1	42.2
CAIRNS AERO.	33.3	35.7	36.8	37.6	38.4	40.9	33.5	37.3
CANBERRA (A) M.O.	30.6	34.4	35.9	37.0	37.9	40.3	30.8	36.4
COCOS ISLAND	31.1	31.8	32.1	32.3	32.4	32.8	31.1	32.2
DARWIN AERO.	34.8	35.8	36.2	36.4	36.7	37.3	34.8	36.3
EAST SALE AERO.	32.1	35.9	38.1	39.9	41.9	49.7	32.6	39.8
KATHERINE P.O.	37.2	38.8	39.3	39.6	39.8	40.3	37.2	39.2
KIMBERLEY RESEARCH	38.1	40.1	40.8	41.2	41.6	42.5	38.2	40.5
MELBOURNE R.O.	34.5	38.0	39.5	40.5	41.4	43.8	34.7	41.7
ONSLOW AERO.	42.2	44.8	45.8	46.4	47.0	48.4	42.3	45.7
PERTH R.O.	37.5	40.2	41.0	41.4	41.6	42.1	37.3	41.0
RICHMOND AERO.	34.4	38.2	39.8	40.8	41.8	44.3	34.6	40.1
TOWNSVILLE AERO.	32.9	35.2	36.4	37.3	38.2	41.4	33.2	37.3
WAGGA AERO.	33.9	37.3	38.6	39.5	40.3	42.3	34.1	39.3
WILLIAMTOWN AERO.	33.0	36.3	38.0	39.2	40.5	44.5	33.3	39.4
WOOMERA (A) M.O.	37.4	40.3	41.4	42.1	42.7	44.1	37.5	42.5

TABLE 21c

EXTREME MAXIMUM TEMPERATURES (WINTER)

Seasonal Maximum Temperatures (°C) that can be expected to be exceeded once in the given return periods together with mean maximum and highest recorded temperatures for each station.

Station	Return Period						Mean	Highest
	2 Year	10 Year	25 Year	50 Year	100 Year	1000 Year	Max.	Recorded
ADELAIDE R.O.	22.1	25.1	26.5	27.4	28.3	30.9	22.3	29.1
ALICE SPRINGS AERO.	30.4	32.9	33.8	34.4	34.9	36.0	30.5	34.0
AMBERLEY AERO.	27.5	30.6	32.2	33.4	34.6	38.6	27.8	33.3
BROOME AERO.	35.0	36.5	36.9	37.2	37.5	37.9	35.0	37.2
CAIRNS AERO.	29.1	30.2	30.5	30.7	30.8	31.1	29.1	30.6
CANBERRA (A) M.O.	18.1	20.3	21.1	21.5	21.8	22.6	18.1	21.7
COCOS ISLAND	29.6	30.2	30.6	30.9	31.1	32.0	29.6	30.7
DARWIN AERO.	34.0	35.5	36.1	36.5	36.9	38.0	34.1	37.0
EAST SALE AERO.	20.8	23.2	24.1	24.7	25.2	26.4	20.9	24.5
KATHERINE P.O.	36.1	37.1	37.3	37.3	37.4	37.5	35.9	37.3
KIMBERLEY RESEARCH	36.7	37.9	38.3	38.5	38.6	38.8	36.6	38.4
MELBOURNE R.O.	20.5	22.7	23.7	24.3	24.8	26.3	20.6	25.0
ONSLOW AERO.	31.1	33.2	34.1	34.6	35.1	36.4	31.2	34.8
PERTH R.O.	23.9	26.5	27.5	28.2	28.8	30.2	24.1	28.1
RICHMOND AERO.	25.4	29.6	31.5	32.8	34.1	38.0	25.7	32.8
TOWNSVILLE AERO.	30.0	31.7	32.4	32.9	33.2	34.2	30.1	33.3
WAGGA AERO.	20.3	22.1	22.7	23.0	23.3	23.9	20.2	23.1
WILLIAMTOWN AERO.	24.7	27.7	28.9	29.7	30.3	32.0	24.9	29.6
WOOMERA (A) M.O.	26.8	30.1	31.3	32.0	32.6	33.9	26.9	32.2

TABLE 21d

EXTREME MAXIMUM TEMPERATURES (SPRING)

Seasonal Maximum Temperatures (°C) that can be expected to be exceeded once in the given return periods together with mean maximum and highest recorded temperatures for each station.

Station	Return Period						Mean Max.	Highest Recorded
	2 Year	10 Year	25 Year	50 Year	100 Year	1000 Year		
ADELAIDE R.O.	36.1	39.8	41.1	42.0	42.7	44.6	36.3	42.7
ALICE SPRINGS AERO.	40.3	41.7	42.0	42.2	42.4	42.7	40.2	42.2
AMBERLEY AERO.	36.3	40.4	42.1	43.3	44.4	47.5	36.5	42.1
BROOME AERO.	41.1	43.0	43.7	44.2	44.6	45.7	41.2	44.3
CAIRNS AERO.	33.7	36.0	37.0	37.8	38.5	40.6	33.9	37.2
CANBERRA (A) M.O.	30.6	34.9	36.9	38.2	39.5	43.4	30.9	38.8
COCOS ISLAND	30.1	30.7	31.0	31.3	31.5	32.2	30.1	31.1
DARWIN AERO.	36.2	37.0	37.2	37.2	37.3	37.3	36.1	37.2
EAST SALE AERO.	32.1	35.4	36.4	37.0	37.5	38.4	32.0	36.8
KATHERINE P.O.	41.0	42.3	42.8	43.1	43.3	44.0	41.3	45.6
KIMBERLEY RESEARCH	42.2	44.0	44.6	45.0	45.3	46.0	42.2	44.4
MELBOURNE R.O.	33.8	37.7	39.2	40.1	40.9	42.7	34.0	40.9
ONSLOW AERO.	41.8	43.9	44.5	44.7	44.9	45.2	41.6	44.6
PERTH R.O.	35.3	38.6	39.7	40.4	40.9	42.1	35.3	39.9
RICHMOND AERO.	37.1	40.2	40.9	41.3	41.6	42.0	36.8	41.1
TOWNSVILLE AERO.	34.6	37.4	38.8	39.8	40.9	44.4	34.9	41.0
WAGGA AERO.	34.8	39.1	40.9	42.1	43.2	46.3	35.0	41.6
WILLIAMTOWN AERO.	36.2	40.1	41.1	41.6	41.9	42.6	36.0	42.6
WOOMERA (A) M.O.	39.8	42.5	43.6	44.3	44.9	46.6	40.0	44.4

TABLE 21e

EXTREME MAXIMUM TEMPERATURES (ANNUAL)

Annual (July-June) Maximum Temperatures (°C) that can be expected to be exceeded once in the given return periods together with mean maximum and highest recorded temperatures for each station.

Station	Return Period						Mean Max.	Highest Recorded
	2 Year	10 Year	25 Year	50 Year	100 Year	1000 Year		
ADELAIDE R.O.	41.0	43.3	44.0	44.3	44.6	45.2	41.0	45.8
ALICE SPRINGS AERO.	42.2	43.8	44.5	44.9	45.3	46.4	42.2	45.2
AMBERLEY AERO.	38.5	41.9	43.3	44.2	45.0	47.3	38.7	43.8
BROOME AERO.	41.6	43.6	44.3	44.8	45.2	46.2	41.8	44.8
CAIRNS AERO.	36.4	38.6	39.7	40.4	41.0	43.0	36.5	40.4
CANBERRA (A) M.O.	36.5	39.5	40.5	41.0	41.5	42.5	36.5	42.2
COCOS ISLAND	31.3	32.0	32.3	32.4	32.6	32.9	31.3	32.3
DARWIN AERO.	36.5	37.1	37.3	37.4	37.5	37.7	36.3	37.2
EAST SALE AERO.	39.5	42.5	43.5	44.1	44.6	45.8	39.5	45.6
KATHERINE P.O.	41.2	43.2	44.2	45.1	45.9	49.1	41.4	45.6
KIMBERLEY RESEARCH	42.6	44.1	44.4	44.6	44.7	45.0	42.6	44.4
MELBOURNE R.O.	40.2	42.8	43.8	44.3	44.8	45.9	40.2	45.6
ONSLOW AERO.	45.9	47.3	47.6	47.8	47.9	48.0	45.7	48.1
PERTH R.O.	40.7	42.6	43.6	44.3	45.1	47.5	40.9	44.7
RICHMOND AERO.	41.0	44.0	45.1	45.8	46.4	48.0	41.2	47.8
TOWNSVILLE AERO.	36.2	39.3	41.2	42.6	44.2	46.5	36.6	42.7
WAGGA AERO.	40.2	42.9	43.8	44.4	44.8	45.6	40.1	44.6
WILLIAMTOWN AERO.	39.7	42.7	43.5	44.0	44.3	44.9	39.6	44.1
WOOMERA (A) M.O.	43.4	45.5	46.2	46.5	46.8	47.5	43.4	47.6

TABLE 22a

EXTREME MINIMUM TEMPERATURES (SUMMER)

Seasonal Minimum Temperatures (°C) that can be expected to be exceeded once in the given return periods together with mean minimum and lowest recorded temperatures for each station.

Station	Return Period						Mean Min	Highest Recorded
	2 Year	10 Year	25 Year	50 Year	100 Year	1000 Year		
ADELAIDE R.O.	9.3	7.9	7.3	6.9	6.6	5.7	9.3	6.8
ALICE SPRINGS AERO.	12.1	9.9	9.1	8.5	8.0	6.7	12.0	8.5
AMBERLEY AERO.	13.7	10.5	8.6	7.1	5.4	-1.2	13.3	6.8
BROOME AERO.	20.9	18.3	16.7	15.3	13.8	7.4	20.5	15.2
CAIRNS AERO.	20.0	18.3	17.4	16.8	16.1	13.8	19.8	17.1
CANBERRA (A) M.O.	3.6	1.8	1.4	1.2	1.0	0.7	3.7	1.1
COCOS ISLAND	22.0	21.0	20.4	20.0	19.5	17.9	21.9	20.1
DARWIN AERO.	21.2	19.3	18.1	16.9	15.6	9.2	20.9	17.2
EAST SALE AERO.	5.3	3.5	2.7	2.1	1.6	0.0	5.2	2.2
KATHERINE P.O.	19.7	17.4	16.3	15.4	14.6	11.7	19.4	16.7
KIMBERLEY RESEARCH	20.2	18.0	16.3	14.6	12.5	10.4	19.9	16.8
MELBOURNE R.O.	7.5	5.8	5.3	4.9	4.7	4.1	7.5	4.4
ONSLOW AERO.	18.1	16.9	16.5	16.3	16.2	15.9	18.1	16.3
PERTH R.O.	10.9	9.3	8.8	8.5	8.3	8.0	11.0	8.6
RICHMOND AERO.	10.2	8.0	7.2	6.7	6.3	5.3	10.1	6.1
TOWNSVILLE AERO.	20.0	18.7	18.2	17.8	17.5	16.8	20.0	17.9
WAGGA AERO.	6.3	4.3	3.7	3.4	3.2	2.9	6.4	3.4
WILLIAMTOWN AERO.	10.6	8.8	8.3	8.0	7.7	7.2	10.7	8.3
WOOMERA (A) M.O.	11.0	9.2	8.5	8.1	7.7	6.8	10.9	8.3

TABLE 22b

EXTREME MINIMUM TEMPERATURES (AUTUMN)

Seasonal Minimum Temperatures (°C) that can be expected to be exceeded once in the given return periods together with mean minimum and lowest recorded temperatures for each station.

Station	Return Period						Mean Min	Highest Recorded
	2 Year	10 Year	25 Year	50 Year	100 Year	1000 Year		
ADELAIDE R.O.	5.6	4.0	3.5	3.2	2.9	2.4	5.6	2.9
ALICE SPRINGS AERO.	1.9	-1.2	-2.3	-2.8	-3.3	-4.3	1.9	-2.5
AMBERLEY AERO.	2.6	0.5	0.0	-0.2	-0.3	-0.5	2.9	-0.3
BROOME AERO.	12.6	9.8	9.0	8.6	8.3	7.8	12.8	8.4
CAIRNS AERO.	14.7	11.7	10.5	9.8	9.2	7.7	14.6	10.1
CANBERRA (A) M.O.	-3.9	-6.0	-6.8	-7.3	-7.7	-8.6	-4.0	-7.5
COCOS ISLAND	22.1	20.6	19.5	18.6	17.6	12.7	21.8	19.4
DARWIN AERO.	17.6	15.7	15.0	14.6	14.3	13.6	17.5	14.2
EAST SALE AERO.	0.0	-1.6	-2.1	-2.3	-2.4	-2.7	0.2	-2.8
KATHERINE P.O.	10.4	8.2	7.5	7.1	6.7	6.0	10.4	7.2
KIMBERLEY RESEARCH	11.2	8.8	8.0	7.5	7.1	6.2	11.7	8.1
MELBOURNE R.O.	2.8	0.9	0.2	-0.3	-0.7	-1.8	2.7	-1.1
ONSLOW AERO.	11.8	9.4	8.4	7.8	7.3	5.9	11.7	7.5
PERTH R.O.	6.7	4.3	3.3	2.7	2.2	0.8	6.6	3.0
RICHMOND AERO.	1.0	-0.8	-1.4	-1.8	-2.1	-2.7	1.0	-1.3
TOWNSVILLE AERO.	10.5	7.3	6.4	6.0	5.6	5.0	10.6	6.2
WAGGA AERO.	-0.1	-2.3	-3.2	-3.7	-4.3	-5.6	-0.3	-4.4
WILLIAMTOWN AERO.	4.4	1.7	0.3	-0.8	-1.9	-5.8	4.1	-0.6
WOOMERA (A) M.O.	4.5	2.4	1.4	0.7	0.0	-2.2	4.4	-0.3

TABLE 22c

EXTREME MINIMUM TEMPERATURES (WINTER)

Seasonal Minimum Temperatures (°C) that can be expected to be exceeded once in the given return periods together with mean minimum and lowest recorded temperatures for each station.

Station	Return Period						Mean Min	Highest Recorded
	2 Year	10 Year	25 Year	50 Year	100 Year	1000 Year		
ADELAIDE R.O.	2.8	1.6	1.0	0.7	0.3	-0.6	2.7	0.6
ALICE SPRINGS AERO.	-2.3	-4.8	-5.8	-6.5	-7.1	-8.7	-2.4	-7.5
AMBERLEY AERO.	-1.2	-3.1	-3.6	-3.9	-4.1	-4.6	-1.1	-3.9
BROOME AERO.	7.3	5.0	4.3	4.0	3.7	3.2	7.4	3.3
CAIRNS AERO.	10.6	8.1	7.0	6.3	5.7	4.1	10.5	6.2
CANBERRA (A) M.O.	-6.4	-8.2	-8.9	-9.3	-9.6	-10.5	-6.5	-10.0
COCOS ISLAND	21.1	20.0	19.0	18.1	16.9	10.2	20.9	18.3
DARWIN AERO.	14.6	12.4	11.3	10.5	9.8	7.3	14.3	10.4
EAST SALE AERO.	-2.6	-4.6	-5.4	-5.9	-6.3	-7.4	-2.7	-5.8
KATHERINE P.O.	5.6	3.4	2.7	2.4	2.1	1.6	5.7	2.8
KIMBERLEY RESEARCH	8.3	5.4	4.2	3.3	2.6	0.5	8.1	4.4
MELBOURNE R.O.	-0.3	-1.5	-2.0	-2.3	-2.6	-3.2	-0.3	-2.7
ONSLOW AERO.	7.1	5.0	4.1	3.4	2.8	0.9	7.0	3.5
PERTH R.O.	3.7	2.2	1.8	1.5	1.3	1.0	3.7	1.6
RICHMOND AERO.	-2.1	-4.4	-6.2	-8.0	-8.3	-12.5	-2.5	-8.3
TOWNSVILLE AERO.	6.4	4.1	3.2	2.6	2.1	0.9	6.3	1.1
WAGGA AERO.	-2.9	-4.4	-5.0	-5.4	-5.7	-6.4	-3.0	-5.4
WILLIAMTOWN AERO.	0.8	-1.4	-2.7	-3.8	-5.0	-9.9	0.5	-3.9
WOOMERA (A) M.O.	1.3	-0.2	-0.9	-1.4	-1.9	-3.4	1.1	-1.4

TABLE 22d

EXTREME MINIMUM TEMPERATURES (SPRING)

Seasonal Minimum Temperatures (°C) that can be expected to be exceeded once in the given return periods together with mean minimum and lowest recorded temperatures for each station.

Station	Return Period						Mean	Highest
	2 Year	10 Year	25 Year	50 Year	100 Year	1000 Year	Min	Recorded
ADELAIDE R.O.	4.5	3.1	2.6	2.3	2.1	1.5	4.4	2.0
ALICE SPRINGS AERO.	2.8	0.2	-0.8	-1.5	-2.1	-3.7	2.7	-1.0
AMBERLEY AERO.	3.8	1.9	1.2	0.7	0.3	-0.6	3.7	0.7
BROOME AERO.	12.9	10.2	9.3	8.8	8.3	7.3	12.9	8.9
CAIRNS AERO.	14.4	12.1	11.4	11.0	10.6	9.9	14.4	11.1
CANBERRA (A) M.O.	-3.1	-4.7	-5.3	-5.7	-6.0	-6.7	-3.2	-5.6
COCOS ISLAND	21.2	20.3	19.7	19.2	18.8	16.8	21.1	19.3
DARWIN AERO.	19.7	17.8	17.1	16.6	16.2	15.1	19.6	16.7
EAST SALE AERO.	0.2	-2.1	-3.2	-4.0	-4.7	-7.0	-0.0	-3.7
KATHERINE P.O.	13.2	10.3	9.5	9.1	8.8	8.3	13.3	9.8
KIMBERLEY RESEARCH	13.3	11.0	10.5	10.2	10.1	9.8	13.5	10.6
MELBOURNE R.O.	2.0	0.6	0.1	-0.1	-0.3	-0.8	2.0	-0.5
ONSLOW AERO.	11.0	9.5	9.0	8.6	8.3	7.4	11.0	8.4
PERTH R.O.	5.4	3.8	3.1	2.6	2.2	1.0	5.3	2.6
RICHMOND AERO.	1.8	0.1	-0.4	-0.6	-0.8	-1.1	1.9	-1.2
TOWNSVILLE AERO.	11.7	9.1	8.2	7.7	7.3	6.3	11.7	8.2
WAGGA AERO.	-0.6	-2.2	-3.1	-3.8	-4.5	-7.0	-0.8	-3.8
WILLIAMTOWN AERO.	3.5	1.9	1.6	1.4	1.3	1.2	3.7	1.1
WOOMERA (A) M.O.	4.1	2.5	1.9	1.5	1.2	0.2	4.0	1.8

TABLE 22e

EXTREME MINIMUM TEMPERATURES (ANNUAL)

Seasonal Minimum Temperatures (°C) that can be expected to be exceeded once in the given return periods together with mean minimum and lowest recorded temperatures for each station.

Station	Return Period						Mean Min	Highest Recorded
	2 Year	10 Year	25 Year	50 Year	100 Year	1000 Year		
ADELAIDE R.O.	2.7	1.5	1.1	0.8	0.5	-0.3	2.7	0.6
ALICE SPRINGS AERO.	-2.3	-4.8	-5.8	-6.4	-7.0	-8.7	-2.4	-7.5
AMBERLEY AERO.	-1.2	-3.0	-3.6	-4.0	-4.3	-5.1	-1.0	-3.9
BROOME AERO.	7.3	5.0	4.3	4.0	3.7	3.2	7.4	3.3
CAIRNS AERO.	10.5	8.1	7.2	6.6	6.1	4.6	10.4	6.2
CANBERRA (A) M.O.	-6.5	-8.2	-8.8	-9.1	-9.4	-10.3	-6.4	-10.0
COCOS ISLAND	20.7	19.5	18.9	18.5	18.1	17.0	20.6	18.3
DARWIN AERO.	14.6	12.4	11.3	10.5	9.8	7.3	14.3	10.4
EAST SALE AERO.	-2.3	-4.0	-4.7	-5.3	-5.7	-7.1	-2.4	-5.8
KATHERINE P.O.	5.4	3.6	3.2	3.0	2.9	2.7	5.7	2.8
KIMBERLEY RESEARCH	8.3	5.4	4.2	3.3	2.6	0.5	8.1	4.4
MELBOURNE R.O.	-0.3	-1.6	-2.0	-2.3	-2.5	-3.1	-0.3	-2.7
ONSLOW AERO.	7.1	5.0	4.1	3.4	2.8	0.9	7.0	3.5
PERTH R.O.	3.5	2.2	1.8	1.5	1.3	0.7	3.5	1.6
RICHMOND AERO.	-2.4	-5.1	-6.5	-7.6	-8.8	-13.0	-2.6	-8.3
TOWNSVILLE AERO.	6.3	4.1	3.3	2.8	2.3	1.1	6.3	1.1
WAGGA AERO.	-3.0	-4.4	-5.0	-5.3	-5.6	-6.3	-3.0	-5.4
WILLIAMTOWN AERO.	0.8	-1.5	-2.5	-3.3	-4.0	-6.2	0.5	-3.9
WOOMERA (A) M.O.	1.2	-0.3	-0.9	-1.2	-1.6	-2.5	1.1	-1.4

EXTREME ABSOLUTE HUMIDITIES

Table 23 gives the extreme absolute humidity likely to be experienced once in the quoted period for all stations for each season together with the means of the maximum and minimum humidities recorded in each season.

The probability (P) that a humidity corresponding to a return period T years will be experienced in any one year is given by:

$$P\ (\%) = (1 - {}^{1}/T) \times 100$$

The figures were obtained using three hourly readings of wet and dry bulb temperatures from each station and calculating the extreme values for each return period from the Jenkinson equation (Annex B).

TABLE 23

EXTREME ABSOLUTE HUMIDITIES LIKELY TO BE EXPERIENCED IN

EACH SEASON FOR ALL STATIONS

NOTE

The figures are given as water vapour pressures (in mb) with the corresponding dew point (°C) in brackets.

TABLE 23a

EXTREME HUMIDITIES (SUMMER)

Maximum Seasonal Water Vapour Pressures (mb) and Dew Points (°C) (in brackets) that can be expected to be exceeded once in the given return periods together with mean maximum and mean minimum humidities for each station.

Station	Return Period						Mean Maximum	Mean Minimum
	2 Year	10 Year	25 Year	50 Year	100 Year	1000 Year		
ADELAIDE	24 (20)	30 (24)	32 (25)	34 (26)	36 (27)	43 (30)	24.4 (21)	4.6 (-4)
ALICE SPRINGS AERO.	28 (23)	35 (27)	38 (28)	41 (29)	43 (30)	51 (33)	27.9 (23)	2.7 (-10)
AMBERLEY AERO.	31 (25)	35 (27)	37 (28)	39 (29)	40 (29)	45 (31)	31.7 (25)	8.3 (4)
BROOME AERO.	39 (29)	43 (30)	45 (31)	47 (32)	49 (32)	55 (35)	38.7 (28)	12.8 (11)
CAIRNS AERO.	34 (26)	36 (27)	37 (28)	38 (28)	39 (29)	42 (30)	34.1 (26)	17.0 (15)
CANBERRA (A) M.O.	23 (20)	28 (23)	30 (24)	32 (25)	34 (26)	39 (29)	23.0 (20)	3.5 (-7)
COCOS ISLAND	33 (26)	35 (27)	36 (27)	37 (28)	37 (28)	39 (29)	33.4 (26)	19.9 (17)
DARWIN AERO.	36 (27)	40 (29)	42 (30)	44 (31)	45 (31)	50 (33)	35.5 (27)	18.7 (16)
EAST SALE AERO.	25 (21)	29 (23)	32 (25)	33 (26)	35 (27)	41 (29)	25.2 (21)	6.9 (2)
KATHERINE P.O.	Insufficient Data						37.0 (28)	12.8 (11)
KIMBERLEY RESEARCH	35 (27)	38 (28)	40 (29)	42 (30)	43 (30)	47 (32)	34.8 (27)	15.1 (13)
MELBOURNE R.O.	25 (21)	30 (24)	32 (25)	34 (26)	36 (27)	42 (30)	25.1 (21)	6.4 (1)
ONSLOW AERO.	37 (28)	43 (30)	46 (31)	48 (32)	50 (33)	57 (35)	37.8 (28)	6.3 (0)
PERTH R.O.	26 (22)	28 (23)	30 (24)	31 (25)	32 (25)	35 (27)	25.8 (22)	6.3 (0)
RICHMOND AERO.	29 (24)	32 (25)	34 (26)	35 (27)	36 (27)	40 (29)	28.9 (23)	6.5 (1)
TOWNSVILLE AERO.	35 (27)	39 (29)	41 (29)	42 (30)	43 (30)	48 (32)	35.3 (27)	14.5 (12)
WAGGA AERO.	26 (22)	30 (24)	32 (25)	33 (26)	35 (27)	39 (29)	26.1 (22)	3.7 (-7)
WILLIAMTOWN AERO.	30 (24)	33 (26)	34 (26)	36 (27)	37 (28)	41 (29)	29.5 (24)	7.0 (2)
WOOMERA (A) M.O.	27 (22)	33 (26)	36 (27)	39 (29)	41 (29)	50 (33)	26.5 (22)	2.6 (-12)

TABLE 23b

EXTREME HUMIDITIES (AUTUMN)

Maximum Seasonal Water Vapour Pressures (mb) and Dew Points (°C) (in brackets) that can be expected to be exceeded once in the given return periods together with mean maximum and mean minimum humidities for each station.

Station	Return Period						Mean Maximum	Mean Minimum
	2 Year	10 Year	25 Year	50 Year	100 Year	1000 Year		
ADELAIDE	21 (18)	24 (20)	26 (22)	27 (22)	29 (23)	33 (26)	21.2 (18)	5.2 (-2)
ALICE SPRINGS AERO.	25 (21)	32 (25)	36 (27)	39 (29)	41 (29)	50 (33)	24.5 (21)	3.0 (-9)
AMBERLEY AERO.	29 (24)	33 (26)	35 (27)	37 (28)	38 (28)	43 (30)	28.9 (23)	5.5 (-2)
BROOME AERO.	38 (28)	41 (29)	43 (30)	44 (31)	46 (31)	50 (33)	37.5 (28)	6.3 (0)
CAIRNS AERO.	33 (26)	35 (27)	37 (28)	38 (28)	39 (29)	43 (30)	32.7 (26)	11.7 (9)
CANBERRA (A) M.O.	20 (18)	25 (21)	27 (22)	29 (23)	31 (25)	36 (27)	20.3 (18)	3.8 (-6)
COCOS ISLAND	34 (26)	36 (27)	37 (28)	37 (28)	38 (28)	40 (29)	33.9 (26)	20.7 (18)
DARWIN AERO.	34 (26)	40 (29)	42 (30)	44 (31)	46 (31)	51 (33)	34.7 (27)	9.4 (6)
EAST SALE AERO.	22 (19)	26 (22)	28 (23)	29 (23)	31 (25)	35 (27)	22.5 (19)	6.2 (0)
KATHERINE P.O.	Insufficient Data						37.1 (28)	6.8 (1)
KIMBERLEY RESEARCH	33 (26)	37 (28)	40 (29)	42 (30)	44 (31)	50 (33)	32.2 (25)	6.1 (0)
MELBOURNE R.O.	21 (18)	24 (20)	25 (21)	26 (22)	27 (22)	31 (25)	21.4 (19)	6.1 (0)
ONSLOW AERO.	36 (27)	40 (29)	42 (30)	44 (31)	45 (31)	50 (33)	36.3 (27)	6.7 (1)
PERTH R.O.	25 (21)	28 (23)	29 (23)	30 (24)	31 (25)	35 (27)	24.9 (21)	6.0 (0)
RICHMOND AERO.	26 (22)	30 (24)	32 (25)	34 (26)	36 (27)	41 (29)	26.1 (22)	5.6 (-1)
TOWNSVILLE AERO.	33 (26)	36 (27)	38 (28)	39 (29)	40 (29)	44 (31)	33.2 (26)	7.3 (2)
WAGGA AERO.	22 (19)	26 (22)	28 (23)	30 (24)	31 (25)	36 (27)	22.1 (19)	4.7 (-4)
WILLIAMTOWN AERO.	26 (22)	31 (25)	33 (26)	35 (27)	37 (28)	42 (30)	26.7 (22)	5.6 (-1)
WOOMERA (A) M.O.	21 (18)	27 (22)	30 (24)	32 (25)	34 (26)	40 (29)	22.3 (19)	3.6 (-7)

TABLE 23c

EXTREME HUMIDITIES (WINTER)

Maximum Seasonal Water Vapour Pressures (mb) and Dew Points (°C) (in brackets) that can be expected to be exceeded once in the given return periods together with mean maximum and mean minimum humidities for each station.

Station	Return Period						Mean Maximum	Mean Minimum
	2 Year	10 Year	25 Year	50 Year	100 Year	1000 Year		
ADELAIDE	15 (13)	17 (15)	18 (16)	19 (17)	19 (17)	22 (19)	15.4 (13)	5.2 (-2)
ALICE SPRINGS AERO.	16 (14)	21 (18)	23 (20)	25 (21)	27 (22)	33 (26)	16.1 (14)	3.0 (-9)
AMBERLEY AERO.	21 (18)	23 (20)	24 (20)	26 (22)	27 (22)	30 (24)	20.4 (18)	3.9 (-6)
BROOME AERO.	28 (23)	35 (27)	38 (28)	40 (29)	42 (30)	50 (33)	28.9 (23)	4.0 (-6)
CAIRNS AERO.	26 (22)	30 (24)	32 (25)	33 (26)	35 (27)	39 (29)	26.7 (22)	7.6 (3)
CANBERRA (A) M.O.	13 (11)	16 (14)	17 (15)	18 (16)	19 (17)	23 (20)	13.3 (11)	2.9 (-10)
COCOS ISLAND	32 (25)	35 (27)	36 (27)	37 (28)	37 (28)	40 (29)	32.5 (26)	18.3 (16)
DARWIN AERO.	29 (23)	34 (26)	36 (27)	37 (28)	39 (29)	44 (32)	29.1 (24)	4.6 (-4)
EAST SALE AERO.	15 (13)	17 (15)	18 (16)	19 (17)	19 (17)	22 (19)	14.9 (13)	4.7 (-3)
KATHERINE P.O.	Insufficient Data						25.2 (21)	3.5 (-7)
KIMBERLEY RESEARCH	26 (22)	32 (25)	36 (27)	39 (29)	41 (29)	50 (33)	25.8 (21)	3.7 (-7)
MELBOURNE R.O.	15 (13)	16 (14)	17 (15)	18 (16)	19 (17)	21 (18)	14.8 (13)	5.3 (-2)
ONSLOW AERO.	26 (22)	29 (23)	30 (24)	31 (25)	32 (25)	36 (27)	26.4 (22)	4.3 (-5)
PERTH R.O.	19 (17)	21 (18)	22 (19)	23 (20)	24 (20)	26 (22)	19.3 (17)	5.9 (-1)
RICHMOND AERO.	17 (15)	19 (17)	21 (18)	21 (18)	22 (19)	25 (21)	17.1 (15)	3.8 (-6)
TOWNSVILLE AERO.	25 (21)	30 (24)	32 (25)	34 (26)	36 (27)	41 (29)	25.1 (22)	4.1 (-6)
WAGGA AERO.	15 (13)	17 (15)	19 (17)	20 (18)	21 (18)	24 (20)	15.6 (14)	4.4 (-5)
WILLIAMTOWN AERO.	18 (16)	20 (18)	21 (18)	22 (19)	23 (20)	26 (22)	17.7 (15)	4.5 (-4)
WOOMERA (A) M.O.	16 (14)	20 (18)	22 (19)	23 (20)	24 (20)	29 (23)	16.0 (14)	3.2 (-9)

TABLE 23d

EXTREME HUMIDITIES (SPRING)

Maximum Seasonal Water Vapour Pressures (mb) and Dew Points (°C) (in brackets) that can be expected to be exceeded once in the given return periods together with mean maximum and mean minimum humidities for each station.

Station	Return Period						Mean Maximum	Mean Minimum
	2 Year	10 Year	25 Year	50 Year	100 Year	1000 Year		
ADELAIDE	19 (17)	22 (19)	23 (20)	24 (20)	25 (21)	29 (23)	18.9 (17)	4.5 (-4)
ALICE SPRINGS AERO.	23 (20)	28 (23)	31 (25)	33 (26)	35 (27)	41 (29)	22.5 (19)	2.1 (-14)
AMBERLEY AERO.	28 (23)	31 (25)	33 (26)	35 (27)	36 (27)	41 (29)	27.8 (23)	4.2 (-5)
BROOME AERO.	34 (26)	38 (28)	41 (29)	42 (30)	44 (31)	49 (32)	34.6 (26)	4.5 (-4)
CAIRNS AERO.	31 (25)	33 (26)	35 (27)	36 (27)	36 (27)	40 (29)	30.8 (24)	9.7 (6)
CANBERRA (A) M.O.	19 (17)	22 (19)	23 (20)	25 (21)	26 (22)	30 (24)	18.9 (17)	3.4 (-8)
COCOS ISLAND	32 (25)	35 (27)	36 (27)	37 (28)	38 (28)	41 (29)	32.2 (25)	18.4 (16)
DARWIN AERO.	34 (26)	38 (28)	40 (29)	41 (29)	43 (30)	47 (32)	34.5 (26)	6.2 (0)
EAST SALE AERO.	20 (18)	24 (20)	26 (22)	27 (22)	28 (23)	33 (26)	20.4 (18)	5.5 (-1)
KATHERINE P.O.	Insufficient Data						32.8 (26)	4.3 (-5)
KIMBERLEY RESEARCH	31 (25)	33 (26)	34 (26)	35 (27)	36 (27)	39 (29)	31.1 (25)	4.4 (-4)
MELBOURNE R.O.	19 (17)	22 (19)	24 (20)	25 (21)	26 (22)	30 (24)	19.4 (17)	5.6 (-1)
ONSLOW AERO.	30 (24)	36 (27)	39 (29)	41 (29)	43 (30)	50 (33)	30.4 (24)	3.9 (-6)
PERTH R.O.	21 (18)	24 (20)	25 (21)	26 (22)	27 (22)	31 (25)	20.8 (18)	5.7 (-1)
RICHMOND AERO.	24 (20)	28 (23)	30 (24)	32 (25)	34 (26)	39 (29)	24.2 (21)	4.1 (-6)
TOWNSVILLE AERO.	31 (25)	34 (26)	35 (27)	37 (28)	38 (28)	41 (29)	31.1 (25)	5.0 (-3)
WAGGA AERO.	21 (18)	25 (21)	26 (22)	28 (23)	29 (23)	33 (26)	21.2 (18)	4.3 (-5)
WILLIAMTOWN AERO.	24 (20)	27 (22)	29 (23)	30 (24)	31 (25)	35 (27)	24.2 (21)	4.6 (-4)
WOOMERA (A) M.O.	20 (18)	23 (20)	25 (21)	27 (22)	28 (23)	33 (26)	19.3 (17)	2.0 (-14)

EXTREME RAINFALL

Tables 24(a)-(e) give the expected return periods for maximum rainfalls in periods from one calendar year to six minutes together with the period of records and the highest recorded amounts where these are known.

The figures in Tables 24a-e were obtained from a number of sources and by various methods. Annual rainfalls were estimated by fitting the Jenkinson equation (Annex B) to values obtained from cumulative frequency distributions either supplied by the Bureau of Meteorology or from "Review of Australia's Water Resources - Monthly Rainfall and Evaporation", Bureau of Meteorology, 1968. Monthly and daily maximum rainfalls were similarly obtained from daily meteorological summaries supplied by the Bureau of Meteorology. The shorter period rainfalls were extracted from an analysis supplied by the Bureau of Meteorology.

For stations north of 30°S latitude the occurrence of tropical cyclones causes difficulties in prediction of daily and monthly maximum rainfalls. Except for Onslow, where 12 exceptionally heavy rainfalls can be attributed to the passage of tropical cyclones, the occurrence of high rainfalls in short periods associated with tropical cyclones is too infrequent to be statistically significant. For the stations listed below where the greatest recorded rainfall exceeded the next highest by more than 20% and where the greatest recorded rainfall coincided with the listed passage of a tropical cyclone (from "Tropical Cyclones in the Australian Region - July 1909 to June 1976", Bureau of Meteorology, 1977) these rainfalls were excluded from the analysis and the highest recorded rainfall associated with a tropical cyclone is given in parenthesis.

The stations concerned and the rainfalls were:

Station	Date	Cyclone	Rainfall (mm)	
			1 Day	1 Month
Amberley	Jan. 1974	Wanda	240	635
Broome	Jan. 1974	Fiona-Gwenda	351	825
Cairns	Mar. 1967	Elaine	403	-
Darwin	Feb. 1955	-	250	-
	Dec. 1974	Tracy	277	-
Townsville	Mar. 1946	-	367	-
	Feb. 1953	-	347	-

TABLE 24

EXTREME RAINFALLS LIKELY TO BE EXPERIENCED IN PERIODS FROM

ONE YEAR TO SIX MINUTES FOR ALL STATIONS

TABLE 24a

ANNUAL TOTAL RAINFALL

Annual Rainfalls (mm) of given stations that can be expected to be exceeded once in the given return period with the highest recorded fall.

Station	Return Period						Highest Recorded	Period of Record (yr)
	2 Year	10 Year	25 Year	50 Year	100 Year	1000 Year		
ADELAIDE R.O.	530	675	725	750	775	825	786	137
ALICE SPRINGS AERO.	250	450	575	650	750	1100	783	102
AMBERLEY AERO.	925	1250	1400	1525	1650	2100	1398	35
BROOME AERO.	550	900	1050	1150	1250	1500	1228	86
CAIRNS AERO.	2125	3200	3750	4125	4500	5600	4433	84
CANBERRA (A) M.O.	640	925	1025	1075	1150	1300	1063	36
COCOS ISLAND	2000	2900	3100	3250	3400	3900	3289	69
DARWIN AERO.	1525	2050	2300	2450	2600	3000	2644	106
EAST SALE AERO.	640	850	925	975	1000	1100	943	33
KATHERINE P.O.	950	1300	1400	1475	1550	1700	1519	103
KIMBERLEY RESEARCH	850	1300	1525	1700	1800	2400	1403	14
MELBOURNE R.O.	650	825	900	925	950	1010	968	121
ONSLOW AERO.	230	550	650	750	925	1150	1084	90
PERTH R.O.	900	1125	1200	1250	1275	1350	1339	101
RICHMOND AERO.	825	1050	1250	1325	1400	1600	1466	38
TOWNSVILLE AERO.	1190	1850	2100	2250	2400	2800	2196	36
WAGGA AERO.	560	800	875	925	1000	1100	989	32
WILLIAMTOWN AERO.	1150	1450	1550	1650	2000	2700	1794	27
WOOMERA (A) M.O.	180	400	550	700	950	1500	493	20

TABLE 24b

MONTHLY TOTAL RAINFALL

Extreme Monthly Rainfalls (mm) of given stations that can be expected to be exceeded once in the given return periods with the highest recorded fall.

Station	Return Period						Highest* Recorded	Period of Record (yr)
	2 Year	10 Year	25 Year	50 Year	100 Year	1000 Year		
ADELAIDE	100	140	165	180	200	250	218	138
ALICE SPRINGS AERO.	85	190	245	285	320	450	241	37
AMBERLEY AERO.	215	335	400	450	500	675	434 (635)	36
BROOME AERO.	236	390	450	490	520	600	439 (825)	37
CAIRNS AERO.	625	940	1100	1200	1325	1700	1128	35
CANBERRA (A) M.O.	115	190	235	275	325	525	312	38
COCOS ISLAND	385	640	765	855	950	1250	886	74
DARWIN AERO.	465	700	815	900	980	1250	815	36
EAST SALE AERO.	125	175	190	205	215	235	200	33
KATHERINE P.O.	420	560	625	710	770	-	744	104
KIMBERLEY RESEARCH	225	475	590	680	765	1050	504	12
MELBOURNE R.O.	115	175	200	225	250	330	238	121
ONSLOW AERO.	140	290	366	420	480	670	375	35
PERTH R.O.	215	345	405	450	490	640	476	101
RICHMOND AERO.	215	340	390	425	450	525	415	42
TOWNSVILLE AERO.	460	860	1060	1210	1350	1850	1142	37
WAGGA AERO.	115	180	220	245	275	360	249	32
WILLIAMTOWN AERO.	240	360	425	475	520	680	428	29
WOOMERA (A) M.O.	55	95	115	130	145	195	121	26

* Figures in brackets are maximum monthly rainfalls associated with tropical cyclones

TABLE 24c

RAINFALL IN ONE DAY

One Day Rainfalls (mm) of given stations that can be expected to be exceeded once in the given return periods with the highest recorded fall.
(Figures rounded to nearest 5 mm)

Station	Return Period						Highest* Recorded	Period of Record (yr)
	2 Year	10 Year	25 Year	50 Year	100 Year	1000 Year		
ADELAIDE	45	65	80	90	100	150	81.0	22
ALICE SPRINGS AERO.	45	75	95	105	120	150	100.4	36
AMBERLEY AERO.	85	125	140	150	175	200	170.2 (240.0)	34
BROOME AERO.	95	165	200	220	250	300	210.1 (350.8)	35
CAIRNS AERO.	155	250	295	335	375	500	368.3 (402.8)	33
CANBERRA (A) M.O.	65	90	105	120	140	175	104.9	37
COCOS ISLAND	130	215	260	295	350	475	287.5	23
DARWIN AERO.	105	150	170	190	200	250	194 (277.0)	33
EAST SALE AERO.	45	80	100	115	125	200	112.8	33
KATHERINE P.O.	100	135	150	170	185	-	234	104
KIMBERLEY RESEARCH	85	145	180	210	250	375	166.1	11
MELBOURNE R.O.	60	85	100	115	125	225	108.0	21
ONSLOW AERO.	85	200	265	320	375	600	283.0	34
PERTH R.O.	60	75	80	90	95	150	87.1	34
RICHMOND AERO.	115	160	180	210	230	300	172.2	29
TOWNSVILLE AERO.	140	220	260	315	350	400	233.4 (366.5)	34
WAGGA AERO.	60	85	100	120	130	200	104.1	32
WILLIAMTOWN AERO.	85	120	130	140	145	150	129.0	30
WOOMERA (A) M.O.	30	55	75	90	100	200	85.4	27

* Figures in brackets are maximum daily rainfalls associated with tropical cyclones

TABLE 24d

RAINFALL IN A ONE HOUR PERIOD

One Hour Period Rainfalls (mm) of given stations that can be expected to be exceeded once in the given return periods.

(Figures rounded to nearest 5 mm)

Station	Return Period				
	2 Year	10 Year	25 Year	50 Year	100 Year
ADELAIDE R.O.	15	25	30	35	40
ALICE SPRINGS AERO.	15	30	35	45	50
AMBERLEY AERO.	40	60	75	85	100
BROOME AERO.	40	65	70	90	100
CAIRNS AERO.	55	75	80	100	115
CANBERRA (A) M.O.	20	35	40	45	50
COCOS ISLAND	No Records Available				
DARWIN AERO.	60	75	85	90	95
EAST SALE AERO.	15	20	25	26	30
KATHERINE	45	65	75	85	95
KIMBERLEY	50	80	95	110	125
MELBOURNE R.O.	20	30	35	40	45
ONSLOW AERO.	30	75	110	140	175
PERTH	20	30	35	40	45
RICHMOND AERO.	30	45	55	65	70
TOWNSVILLE AERO.	50	75	85	100	110
WAGGA AERO.	25	35	37	40	45
WILLIAMTOWN AERO.	30	40	45	50	55
WOOMERA (A) M.O.	15	25	30	35	40

TABLE 24e

RAINFALL IN A SIX MINUTE PERIOD

Six Minute Period Rainfalls (mm) of given stations that can be expected to be exceeded once in the given return periods.

Station	Return Period				
	2 Year	10 Year	25 Year	50 Year	100 Year
ADELAIDE R.O.	5	8	10	11	12
ALICE SPRINGS AERO.	5	9	12	14	17
AMBERLEY AERO.	13	21	26	29	32
BROOME AERO.	12	19	24	27	30
CAIRNS AERO.	16	24	26	31	35
CANBERRA (A) M.O.	7	10	12	14	16
COCOS ISLAND	17	21	23	26	28
DARWIN AERO.	19	21	24	26	28
EAST SALE AERO.	5	6	7	8	9
KATHERINE	14	20	24	27	30
KIMBERLEY	15	21	27	35	38
MELBOURNE R.O.	7	10	12	13	15
ONSLOW AERO.	10	24	34	43	54
PERTH	7	10	11	13	14
RICHMOND AERO.	8	11	18	15	17
TOWNSVILLE AERO.	15	22	25	30	33
WAGGA AERO.	8	11	13	14	15
WILLIAMTOWN AERO.	9	12	14	15	16
WOOMERA (A) M.O.	4	8	9	12	13

EXTREME WIND GUST SPEEDS

Tables 25(a)-(d) give the extreme wind gust speed likely to be experienced once in the quoted period for all stations for each season. The mean maximum seasonal gust speed and the highest recorded readings are also given.

The probability (P) that a gust speed corresponding to a return period T years will be experienced in any one year is given by:

$$P\ (\%) = (1-1/T) \times 100$$

The values in the tables were obtained by fitting the Jenkinson equation (Annex B) to the annual seasonal maxima extracted from daily meteorological summaries. No corrections for anemometer heights or terrain factors were made. The occurrence of tropical cyclones causes problems in predicting extreme gust speeds for coastal stations north of latitude 30°S as was discussed under Extreme Rainfall. As was done with very high rainfall figures, gust speeds that were more than 20% higher than the next highest recorded and which coincided with the recorded passage of a tropical cyclone were omitted from the analysis except for Autumn at Onslow where the number of tropical cyclones was statistically significant. The tables therefore show maximum gust speeds that can be expected when the station is not close to the centre of a tropical cyclone. Australian Standard 1170 Part 2 1975 "SAA Loading Code Part 2 - Wind Forces" gives gust speeds for all areas subject to tropical cyclones of:

	RETURN PERIOD		
	25	50	100
Gust Speed (km/h)	180	200	220

Therefore in using the tables, if the possible occurrence of a tropical cyclone has to be taken into account, the figures from AS 1170 should be used for those stations marked as subject to tropical cyclones.

Other meteorological phenomena that can cause extreme gust speeds are "willi-willies" in hot dry areas and tornadic squalls that occur occasionally in southern areas. These are highly localized, infrequent events and the likelihood of damage is very low and not predictable.

The extreme seasonal wind gust speeds given in Tables 25(a)-(d) are generally lower than the extreme annual wind gust speeds in AS 1170 - Part 2. The latter figures should be used for situations such as design of permanent buildings where extreme annual wind gust is the relevant parameter.

TABLE 25

EXTREME WIND GUSTS LIKELY TO BE EXPERIENCED IN

EACH SEASON FOR ALL STATIONS

TABLE 25a

EXTREME WIND GUSTS (SUMMER)

Maximum seasonal wind gusts (km/h) that can be expected to be exceeded once in the given return periods with mean maximum and highest recorded for each station.

Station	Return Period						Mean Max.	Highest Recorded
	2 year	10 year	25 year	50 year	100 year	1000 year		
ADELAIDE R.O.	85	105	115	125	135	160	86.1	121
ALICE SPRINGS AERO.	80	100	115	120	130	160	84.0	132
AMBERLEY AERO.	85	115	135	150	160	200	86.9	135
* BROOME AERO.	100	135	155	170	180	225	101.7	161
* CAIRNS AERO.	65	85	90	100	105	125	66.6	106
CANBERRA (A) M.O.	90	105	115	120	130	150	88.1	120
* COCOS ISLAND	75	110	125	140	150	190	78.2	122
* DARWIN AERO.	85	105	115	125	130	160	83.2	106
EAST SALE AERO.	100	120	130	140	150	175	97.4	122
KATHERINE P.O.	Insufficient Data							
KIMBERLEY RESEARCH	Insufficient Data							
MELBOURNE R.O.	85	100	105	110	115	130	83.8	119
* ONSLOW AERO.	85	120	135	150	160	200	88.8	150
PERTH R.O.	75	90	100	105	110	125	74.8	103
RICHMOND AERO.	85	125	140	160	170	220	89.3	135
* TOWNSVILLE AERO.	70	95	110	120	130	160	74.6	115
WAGGA AERO.	85	105	110	120	125	145	86.4	135
WILLIAMTOWN AERO.	85	120	135	145	160	190	90.1	137
WOOMERA (A) M.O.	100	115	130	140	145	175	96.4	115

* Tropical cyclone area

TABLE 25b

EXTREME WIND GUSTS (AUTUMN)

Maximum seasonal wind gusts (km/h) that can be expected to be exceeded once in the given return periods with mean maximum and highest recorded for each station.

Station	Return Period 2 year	10 year	25 year	50 year	100 year	1000 year	Mean Max.	Highest Recorded
ADELAIDE R.O.	85	110	120	130	140	170	86.8	130
ALICE SPRINGS AERO.	65	80	85	90	95	110	67.1	87
AMBERLEY AERO.	65	85	90	100	105	125	66.6	85
* BROOME AERO.	80	110	120	130	140	180	80.2	115
* CAIRNS AERO.	65	80	90	95	100	120	67.2	85
CANBERRA (A) M.O.	80	100	110	115	125	150	80.1	111
* COCOS ISLAND	75	100	110	115	125	150	77.9	102
* DARWIN AERO.	75	90	100	105	110	130	72.4	91
EAST SALE AERO.	90	105	110	115	125	140	89.6	104
KATHERINE P.O.	Insufficient Data							
KIMBERLEY RESEARCH	Insufficient Data							
MELBOURNE R.O.	85	95	100	105	110	125	83.6	96
* ONSLOW AERO.	85	130	155	175	190	250	89.5	152
PERTH R.O.	90	115	130	140	150	180	91.4	119
RICHMOND AERO.	75	105	120	130	140	180	75.0	122
* TOWNSVILLE AERO.	65	100	110	120	135	170	69.4	143
WAGGA AERO.	75	100	110	120	130	160	76.9	145
WILLIAMTOWN AERO.	95	135	160	170	190	240	97.0	148
WOOMERA (A) M.O.	70	100	110	120	130	160	74.5	111

* Tropical cyclone area

TABLE 25c

EXTREME WIND GUSTS (WINTER)

Maximum seasonal wind gusts (km/h) that can be expected to be exceeded once in the given return periods with mean maximum and highest recorded for each station.

Station	Return Period						Mean Max.	Highest Recorde
	2 year	10 year	25 year	50 year	100 year	1000 year		
ADELAIDE R.O.	90	105	120	130	140	170	95.4	148
ALICE SPRINGS AERO.	65	80	85	90	95	110	65.5	96
AMBERLEY AERO.	70	90	100	105	110	130	71.7	91
BROOME AERO.	60	75	80	85	90	105	62.0	85
CAIRNS AERO.	60	80	90	95	100	120	61.1	91
CANBERRA (A) M.O.	85	100	110	115	125	145	84.0	113
COCOS ISLAND	80	100	115	120	130	160	80.5	130
DARWIN AERO.	55	63	66	68	70	80	57.1	67
EAST SALE AERO.	95	120	130	140	150	180	97.3	132
KATHERINE P.O.	Insufficient Data							
KIMBERLEY RESEARCH	Insufficient Data							
MELBOURNE R.O.	95	110	120	125	130	150	94.5	107
ONSLOW AERO.	65	80	85	90	100	120	64.5	102
PERTH R.O.	110	135	145	155	160	190	108.8	156
RICHMOND AERO.	80	110	125	135	150	180	82.9	126
TOWNSVILLE AERO.	60	70	75	80	85	100	60.4	85
WAGGA AERO.	75	100	105	110	115	130	79.1	150
WILLIAMTOWN AERO.	95	125	145	155	170	210	96.0	154
WOOMERA (A) M.O.	85	105	120	130	135	165	85.8	126

TABLE 25d

EXTREME WIND GUSTS (SPRING)

Maximum seasonal wind gusts (km/h) that can be expected to be exceeded once in the given return periods with mean maximum and highest recorded for each station.

Station	Return Period 2 year	10 year	25 year	50 year	100 year	1000 year	Mean Max.	Highest Recorded
ADELAIDE R.O.	95	110	120	125	130	150	98.7	130
ALICE SPRINGS AERO.	90	110	120	125	130	160	86.6	107
AMBERLEY AERO.	80	120	135	150	170	210	84.2	152
* BROOME AERO.	60	80	85	90	100	115	62.4	85
* CAIRNS AERO.	60	75	80	85	90	110	63.8	91
CANBERRA (A) M.O.	95	110	120	130	140	160	92.1	128
* COCOS ISLAND	75	90	95	100	110	130	73.2	93
* DARWIN AERO.	75	95	105	115	120	150	78.0	117
EAST SALE AERO.	100	115	125	130	140	160	100.6	119
KATHERINE P.O.	Insufficient Data							
KIMBERLEY RESEARCH	Insufficient Data							
MELBOURNE R.O.	90	100	105	110	115	125	91.0	111
* ONSLOW AERO.	65	80	90	95	100	120	66.9	98
PERTH R.O.	90	110	120	125	135	160	91.0	117
RICHMOND AERO.	90	115	125	135	145	170	92.9	117
* TOWNSVILLE AERO.	60	75	80	85	90	105	63.7	83
WAGGA AERO.	85	115	130	140	150	180	88.8	139
WILLIAMTOWN AERO.	95	110	115	120	130	150	94.0	109
WOOMERA (A) M.O.	100	135	150	160	180	220	104.9	159

* Tropical cyclone area

EXTREME 10 MINUTE WIND SPEEDS

Tables 26(a)-(d) give the extreme 10 minute average wind speed that is likely to be experienced once in the quoted return period for all stations for each season. The mean seasonal maximum, the highest recorded and the mean of all readings are also given.

The probability (P) that a 10 minute average wind speed corresponding to a return period T years will be experienced in any one year is given by:

$$P\ (\%) = (1 - 1/T) \times 100$$

The highest 10 minute average wind speed in each season was extracted from three-hourly surface observations and fitted to the Jenkinson equation (Annex B).

The problems of prediction caused by tropical cyclones are the same as for extreme rainfall and extreme wind gusts and the same procedure of omitting readings which are more than 20% higher than the next highest recording has been followed. In the absence of alternative estimates for 10 minute average wind speeds during tropical cyclones the highest recorded 10 minute average wind speed associated with a tropical cyclone is given in parenthesis after the highest recorded reading and the readings omitted are given below.

STATION	DATE	CYCLONE	WIND SPEED (km/h)
Broome	Mar. 1943	-	122
Cocos Island	Jan. 1967	Edith	139
Darwin	Dec. 1975	Tracy	120
Onslow	Mar. 1956	-	109
	Feb. 1975	Trixie	167

TABLE 26

EXTREME 10 MINUTE AVERAGE WIND SPEEDS FOR EACH

SEASON FOR ALL STATIONS

TABLE 26a

EXTREME 10 MINUTE AVERAGE WIND SPEEDS (SUMMER)

Maximum seasonal 10 minute average wind speeds (km/h) that can be expected to be exceeded once in the given return periods with mean maximum, highest recorded and mean wind speed for each station.

Station	Return Period 2 year	10 year	25 year	50 year	100 year	1000 year	Mean Max.	Highest Recorded	Mean Speed
ADELAIDE R.O.	45	55	60	65	70	80	46.8	63	13.6
ALICE SPRINGS AERO.	50	65	75	80	85	110	49.6	74	11.4
AMBERLEY AERO.	40	60	65	70	80	100	42.9	74	9.8
BROOME AERO.	50	70	80	85	95	115	52.0	85	13.9
CAIRNS AERO.	35	45	55	60	65	75	36.5	59	9.2
CANBERRA (A) M.O.	45	65	70	75	85	105	49.5	74	9.8
* COCOS ISLAND	45	60	65	70	80	95	46.4	65 (139)	18.6
* DARWIN AERO.	45	65	75	80	90	115	47.1	89 (120)	11.3
EAST SALE AERO.	55	75	85	90	95	115	58.8	89	13.9
KATHERINE P.O.	35	55	65	75	85	115	32.5	46	4.1
KIMBERLEY RESEARCH	30	50	65	70	80	110	29.9	52	6.8
MELBOURNE R.O.	45	55	60	62	65	80	43.5	52	12.2
* ONSLOW AERO.	55	80	95	105	115	150	56.1	108 (167)	18.6
PERTH R.O.	45	55	60	65	70	85	42.4	56	15.7
RICHMOND AERO.	45	60	65	70	75	95	46.0	65	7.3
* TOWNSVILLE AERO.	40	55	60	65	70	80	41.9	63 (120)	11.1
WAGGA AERO.	45	65	70	75	80	100	48.8	74	11.7
WILLIAMTOWN AERO.	50	70	75	85	90	110	52.5	78	12.7
WOOMERA (A)	55	65	70	75	80	95	56.4	70	17.6

* Winds associated with tropical cyclone shown in parenthesis

TABLE 26b

EXTREME 10 MINUTE AVERAGE WIND SPEEDS (AUTUMN)

Maximum seasonal 10 minute average wind speeds (km/h) that can be expected to be exceeded once in the given return periods with mean maximum, highest recorded and mean wind speed for each station.

Station	Return Period						Mean Max.	Highest Recorded	Mean Speed
	2 year	10 year	25 year	50 year	100 year	1000 year			
ADELAIDE R.O.	45	60	70	75	80	100	47.8	67	11.1
ALICE SPRINGS AERO.	40	55	60	65	70	85	41.2	59	8.4
AMBERLEY AERO.	35	50	55	60	60	75	37.8	56	6.7
* BROOME AERO.	40	60	70	80	85	110	44.4	80 (122)	10.1
CAIRNS AERO.	40	55	60	70	75	90	41.2	74	12.9
CANBERRA (A) M.O.	45	60	65	70	75	90	47.0	74	8.1
COCOS ISLAND	50	65	70	75	80	100	51.3	67	21.4
DARWIN AERO.	40	55	65	70	75	95	42.7	65	9.7
EAST SALE AERO.	55	75	85	90	100	120	57.7	85	11.1
KATHERINE P.O.	35	50	60	65	70	95	34.8	46	6.5
KIMBERLEY RESEARCH	45	55	65	75	80	100	40.6	52	10.0
MELBOURNE R.O.	45	55	60	65	70	85	44.7	59	10.8
* ONSLOW AERO.	50	80	90	100	110	145	54.4	93 (109)	14.3
PERTH R.O.	45	60	70	75	80	100	46.0	74	12.4
RICHMOND AERO.	45	55	65	70	75	90	42.5	59	5.5
TOWNSVILLE AERO.	35	50	55	60	65	75	39.0	56	9.5
WAGGA AERO.	45	60	65	70	75	95	44.3	63	8.3
WILLIAMTOWN AERO.	50	65	75	80	85	105	53.3	74	10.5
WOOMERA (A) M.O.	45	70	75	85	90	110	51.6	83	13.0

* Winds associated with tropical cyclones shown in parenthesis

TABLE 26c

EXTREME 10 MINUTE AVERAGE WIND SPEEDS (WINTER)

Maximum seasonal 10 minute average wind speeds (km/h) that can be expected to be exceeded once in the given return periods with mean maximum, highest recorded and mean wind speed for each station.

Station	Return Period						Mean Max.	Highest Recorded	Mean Speed
	2 year	10 year	25 year	50 year	100 year	1000 year			
ADELAIDE R.O.	45	60	65	70	75	90	48.4	63	12.5
ALICE SPRINGS AERO.	45	60	70	75	80	100	44.8	67	7.5
AMBERLEY AERO.	40	55	60	65	70	90	41.7	65	6.3
BROOME AERO.	40	50	55	60	65	75	40.5	56	10.3
CAIRNS AERO.	35	45	50	55	57	65	38.5	48	14.0
CANBERRA (A) M.O.	50	70	80	90	95	120	53.5	93	10.3
COCOS ISLAND	50	60	65	67	70	80	52.0	59	26.6
DARWIN AERO.	35	50	55	57	60	75	38.9	56	10.3
EAST SALE AERO.	60	75	85	90	100	120	60.6	93	11.6
KATHERINE P.O.	35	60	75	80	90	120	40.3	56	7.1
KIMBERLEY RESEARCH	40	50	55	60	65	75	41.7	48	10.0
MELBOURNE R.O.	45	55	60	65	70	80	47.3	59	12.4
ONSLOW AERO.	45	55	60	62	65	80	44.1	57	13.4
PERTH R.O.	50	70	80	85	90	115	52.1	78	12.2
RICHMOND AERO.	50	65	70	80	85	100	51.3	72	6.5
TOWNSVILLE AERO.	35	45	50	55	60	70	37.7	46	9.1
WAGGA AERO.	45	55	65	70	75	90	45.6	65	7.6
WILLIAMTOWN AERO.	60	90	105	120	130	165	64.6	115	13.3
WOOMERA (A) M.O.	55	65	70	75	80	95	54.5	67	12.7

TABLE 26d

EXTREME 10 MINUTE AVERAGE WIND SPEEDS (SPRING)

Maximum seasonal 10 minute average wind speeds (km/h) that can be expected to be exceeded once in the given return periods with mean maximum, highest recorded and mean wind speed for each station.

Station	Return Period 2 year	10 year	25 year	50 year	100 year	1000 year	Mean Max.	Highest Recorded	Mean Speed
ADELAIDE R.O.	50	60	65	70	70	83	51.0	61	14.8
ALICE SPRINGS AERO.	50	70	80	85	95	116	51.9	74	11.2
AMBERLEY AERO.	40	50	55	60	65	76	41.5	56	9.0
BROOME AERO.	40	50	55	60	65	77	40.8	56	12.7
CAIRNS AERO.	40	50	55	57	60	74	39.3	54	11.7
CANBERRA (A) M.O.	55	65	70	72	75	91	53.5	72	11.2
* COCOS ISLAND	50	60	65	70	75	88	49.7	65 (89)	27.3
DARWIN AERO.	35	45	50	55	60	72	38.0	52	10.3
EAST SALE AERO.	60	75	85	90	100	118	61.7	93	14.0
KATHERINE P.O.	30	50	60	65	75	96	31.5	46	5.5
KIMBERLEY RESEARCH	40	60	70	75	85	112	37.4	50	9.8
MELBOURNE R.O.	45	60	65	70	75	91	47.0	67	12.9
ONSLOW R.O.	45	60	65	70	75	94	47.9	70	19.0
PERTH R.O.	50	60	70	75	80	97	48.8	72	14.0
RICHMOND AERO.	50	70	80	85	90	110	54.6	74	8.7
TOWNSVILLE AERO.	40	50	52	55	60	68	40.4	56	13.0
WAGGA AERO.	50	65	75	80	90	111	50.5	78	10.6
WILLIAMTOWN AERO.	60	75	85	90	95	117	61.7	83	13.2
WOOMERA (A) M.O.	60	70	75	80	85	100	59.8	72	17.4

* Winds associated with tropical cyclones in parenthesis

MEAN WIND DATA ON A DIURNAL AND SEASONAL BASIS

Tables 27(a)-(s) give, for each station (i) the mean wind speed over the period of record for each of the sixteen directions at each three-hourly recording and (ii) the percentage of the total time that the wind blew from the given direction for each three-hourly recording. It is possible by combining the two figures to get mean wind run for any period, i.e.

$$R = \frac{V \times P \times H}{100}$$

where R = wind run (km)

V = mean velocity (km/h)

P = percentage time

H = number of hours in the period

The data was extracted from three-hourly surface observations. Most stations collect only seven three-hourly readings each day missing either the 2100 or the 2400 readings and where less than 100 readings were available the row is left blank. Katherine and Kimberley had only 0900 and 1500 readings.

TABLE 27

MEAN WIND SPEEDS AND PERCENTAGE TIME WIND BLEW

FROM EACH DIRECTION BY TIME OF DAY AND SEASON

TABLE 27a(i)

ADELAIDE MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	10.1	10.6	11.4	12.8	14.8	13.0	12.3	9.8	11.7	12.6	19.1	16.1	16.6	13.7	9.9	6.1
	0600	11.2	10.3	11.3	11.5	11.8	11.2	9.9	10.2	11.1	13.6	15.4	17.1	16.4	16.5	16.1	7.0
	0900	13.8	11.9	12.1	10.8	14.3	13.3	15.8	13.3	15.2	13.9	15.6	13.4	13.3	11.0	11.0	11.4
SUMMER	1200	14.1	11.9	14.0	10.5	13.3	14.5	17.7	16.9	17.1	18.7	17.4	15.6	15.3	18.4	18.5	15.2
	1500	11.4	12.4	15.8	13.7	15.8	15.7	20.3	19.6	18.7	20.6	19.3	17.7	16.5	19.7	21.4	21.0
	1800	14.8	15.1	15.6	14.0	16.2	18.7	19.3	19.2	17.2	17.3	18.1	17.1	12.9	14.2	14.5	13.2
	2100	11.6	10.1	10.7	10.3	12.4	15.3	13.9	13.9	14.0	14.0	17.7	23.8	26.8	15.9	6.3	8.8
	2400	8.8	10.3	11.3	12.6	15.2	15.0	13.4	12.6	11.6	12.9	16.1	18.8	18.6	8.4	7.0	7.2
	0300	10.3	10.1	10.0	10.1	10.7	11.0	9.2	8.8	11.2	15.0	18.0	18.5	16.6	13.8	18.0	9.7
	0600	10.2	9.4	9.9	9.1	9.8	8.8	7.8	8.3	11.3	15.5	21.6	22.3	16.5	16.4	12.5	10.2
	0900	11.4	9.5	9.9	10.6	11.4	12.5	11.7	11.8	12.3	14.3	15.7	18.6	18.7	14.8	10.6	11.2
AUTUMN	1200	13.4	11.8	11.8	9.6	12.1	14.1	14.7	12.4	15.2	17.2	17.5	15.5	16.9	16.6	16.2	13.0
	1500	12.2	11.7	10.7	10.0	13.7	15.6	16.7	16.4	15.7	16.6	16.6	13.8	16.4	17.7	18.0	14.5
	1800	12.0	8.5	8.4	11.0	9.8	12.3	15.1	13.0	10.7	12.0	17.5	16.6	15.6	13.8	11.2	9.8
	2100	13.9	9.6	9.1	8.2	9.3	10.3	9.7	9.9	11.1	14.5	18.9	19.0	17.4	15.7	15.9	11.3
	2400	11.4	10.2	9.6	9.1	9.4	11.0	10.1	9.8	8.4	11.6	17.1	18.7	17.6	17.4	13.2	9.9
	0300	12.6	11.2	10.1	9.0	7.3	6.5	10.9	7.1	9.4	16.3	18.9	16.9	16.4	18.4	14.9	13.3
	0600	12.8	11.4	10.5	8.9	9.0	6.1	8.3	7.8	10.8	17.2	20.7	21.1	17.7	15.9	16.8	13.2
	0900	14.0	11.0	10.4	9.5	8.6	7.4	14.0	9.1	12.3	16.5	21.3	18.3	20.5	19.2	15.9	14.4
WINTER	1200	16.0	14.4	12.0	9.6	11.6	12.6	14.0	15.8	16.6	19.8	19.9	18.3	18.8	20.1	18.9	16.8
	1500	15.7	13.9	11.1	13.9	13.2	13.3	14.6	16.8	17.5	17.0	17.7	16.8	17.9	18.7	19.2	17.1
	1800	12.4	10.4	9.2	8.5	8.3	7.8	8.4	8.9	9.4	11.8	16.9	16.3	15.0	13.8	12.8	11.7
	2100	14.5	11.4	9.9	8.6	7.4	7.5	6.5	8.6	9.5	15.8	18.6	18.8	16.6	16.3	15.1	12.0
	2400	12.6	10.8	9.8	9.6	8.5	7.3	6.9	6.8	9.4	15.5	19.9	15.3	19.2	17.6	12.5	12.9
	0300	12.7	11.6	12.7	12.6	11.5	10.8	11.0	9.4	11.3	14.9	22.1	22.0	20.3	19.2	19.3	12.2
	0600	11.8	13.1	12.6	11.9	11.3	9.1	9.7	9.7	11.7	17.2	20.8	20.6	22.4	17.1	14.8	12.6
	0900	15.3	15.0	14.2	14.6	14.1	14.9	15.4	14.2	16.0	17.9	19.8	21.2	19.5	16.9	14.2	13.8
SPRING	1200	16.9	17.4	15.3	15.9	13.0	14.3	17.9	19.2	19.6	19.7	19.5	19.9	20.6	20.8	23.4	17.1
	1500	18.3	16.6	17.6	15.9	13.9	15.4	18.4	20.5	18.4	19.8	20.6	19.3	19.5	20.2	21.6	19.1
	1800	13.9	12.9	13.4	11.7	13.2	17.1	18.4	15.7	14.6	15.6	17.8	19.8	18.1	12.3	16.3	13.2
	2100	17.9	12.5	11.0	10.5	11.4	11.0	11.6	12.0	12.5	15.8	20.4	20.6	21.9	14.8	16.0	15.3
	2400	14.2	11.7	11.3	12.5	12.2	12.2	11.2	11.2	11.6	14.4	21.3	21.5	21.1	18.5	12.0	11.2

TABLE 27a(ii)

ADELAIDE PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	2.8	7.5	9.0	14.3	7.4	11.2	9.0	12.1	7.3	5.4	3.7	4.3	1.5	1.8	1.2	1.3
	0600	3.4	12.4	11.8	10.8	6.0	7.8	7.5	13.0	6.4	6.8	4.6	4.2	1.5	1.2	0.6	1.8
	0900	7.5	7.2	4.1	5.1	2.7	5.3	6.1	8.6	7.0	11.7	8.7	8.7	2.5	3.5	4.1	7.1
SUMMER	1200	2.5	2.7	1.5	2.4	1.5	4.2	4.5	5.6	5.8	16.4	20.6	14.5	5.4	5.5	3.2	3.6
	1500	0.7	1.4	0.7	2.1	1.3	3.9	6.0	7.9	7.9	28.8	21.7	9.3	3.0	3.1	1.3	1.0
	1800	0.8	0.8	1.0	2.0	3.0	9.2	13.7	14.7	10.1	25.9	11.0	4.2	0.9	1.2	0.5	0.8
	2100	0.8	1.9	2.9	6.7	8.8	16.6	13.7	20.3	10.5	8.7	5.3	2.2	0.6	0.3	0.4	0.4
	2400	2.1	5.4	5.4	11.6	9.5	14.3	10.5	13.1	8.8	7.1	3.4	4.2	1.6	1.5	0.6	0.9
	0300	6.1	16.9	15.4	12.2	5.0	6.4	5.9	6.8	4.2	4.2	3.7	5.1	2.6	2.1	1.0	2.3
	0600	6.1	21.2	17.5	9.6	4.6	5.6	4.3	7.0	3.4	4.1	3.1	4.3	2.9	2.0	1.3	3.1
	0900	11.7	19.5	9.1	5.2	3.6	4.8	4.2	6.3	4.2	5.9	3.6	6.1	3.3	3.1	2.2	7.2
AUTUMN	1200	6.9	4.6	2.3	2.1	1.7	5.0	3.8	4.7	4.1	9.4	11.2	10.2	5.3	9.3	8.3	10.9
	1500	3.0	2.6	1.7	1.7	1.7	4.9	4.5	5.7	5.3	16.9	16.5	12.6	6.1	7.5	5.2	4.1
	1800	3.2	5.1	3.0	3.1	2.8	8.9	10.3	13.2	9.5	15.4	8.4	5.4	3.0	2.8	2.6	3.2
	2100	3.7	7.9	10.5	12.3	6.9	9.9	10.7	11.4	6.0	4.8	4.0	5.1	2.6	1.5	1.2	1.6
	2400	4.3	12.9	12.9	13.3	7.2	8.2	6.8	6.7	4.4	6.3	3.5	4.3	2.7	2.2	1.4	2.7
	0300	10.7	20.1	19.0	11.0	1.2	2.7	1.2	2.9	2.0	3.5	2.9	5.1	3.0	3.9	3.4	7.4
	0600	11.8	25.7	17.4	7.8	1.5	1.5	1.2	3.1	2.5	4.4	3.1	2.9	3.7	3.9	3.3	6.1
	0900	15.9	25.0	13.1	5.7	0.8	0.9	0.8	2.8	2.2	4.7	3.6	4.0	2.7	4.9	3.5	9.5
WINTER	1200	12.2	7.5	1.9	1.3	1.3	1.7	1.6	2.6	2.4	7.0	6.8	6.7	6.0	10.1	12.9	18.1
	1500	7.4	4.2	1.7	1.0	0.7	1.8	1.7	2.1	2.5	9.7	11.1	11.9	8.5	11.7	12.6	11.3
	1800	7.5	10.4	5.9	3.3	1.7	2.5	4.0	8.8	5.6	8.0	6.2	7.1	7.0	6.5	5.4	10.1
	2100	7.9	15.4	16.9	9.6	3.7	3.3	2.4	4.5	3.8	5.1	3.2	5.2	4.3	5.5	3.5	5.6
	2400	10.0	21.6	13.9	12.1	1.9	3.0	2.6	4.0	2.5	4.6	1.5	4.5	4.1	3.5	2.6	7.6
	0300	5.2	11.6	12.1	11.8	4.8	6.0	4.3	8.1	5.8	6.9	5.6	7.4	3.4	2.4	1.4	3.2
	0600	6.2	17.1	13.0	9.0	3.1	4.4	4.8	7.3	5.2	8.1	5.5	6.5	3.1	2.8	1.2	2.7
	0900	10.4	11.5	6.2	3.9	1.7	3.0	2.6	5.5	6.1	9.4	7.6	9.0	4.7	4.3	4.8	9.3
SPRING	1200	6.3	5.8	2.7	1.7	1.0	2.5	2.5	3.8	3.6	12.7	15.1	13.1	7.5	9.1	6.3	6.2
	1500	3.6	3.4	1.8	1.7	1.2	2.3	2.6	4.2	5.6	18.9	18.0	14.7	7.8	7.1	4.0	3.2
	1800	2.1	4.1	3.5	3.1	2.1	4.1	6.6	10.7	10.6	20.3	13.1	8.1	3.6	2.6	2.2	3.1
	2100	1.9	6.4	9.3	9.4	5.3	10.1	7.9	12.6	8.3	8.0	8.1	6.1	2.4	2.1	0.8	1.2
	2400	4.1	9.9	10.6	11.3	6.6	8.8	5.9	8.9	5.4	8.4	5.2	5.9	2.6	2.6	1.2	2.7

TABLE 27b(i)

ALICE SPRINGS MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	15.3	10.8	9.4	10.4	12.9	13.0	13.8	13.5	13.5	12.7	14.1	9.5	8.1	13.3	15.6	15.5
	0600	12.4	11.5	13.2	9.4	11.1	12.3	13.2	11.3	9.5	10.1	8.6	5.9	8.2	13.8	15.4	13.2
	0900	15.4	12.9	12.1	14.7	16.4	18.7	18.4	16.7	14.4	10.8	13.0	10.4	12.6	14.8	17.5	15.2
SUMMER	1200	14.4	13.3	14.4	16.5	18.4	19.2	18.3	15.3	12.5	13.3	11.2	11.8	16.0	17.8	15.7	15.4
	1500	14.7	12.8	15.0	16.1	18.1	18.7	18.5	16.4	13.7	12.6	14.7	14.3	16.4	14.6	14.2	13.9
	1800	14.8	14.0	15.0	16.8	17.6	19.3	19.7	17.7	17.3	16.1	18.0	16.0	12.6	17.0	12.2	16.1
	2100	14.0	13.4	11.8	12.2	13.6	13.3	15.4	15.2	17.7	15.3	13.1	14.3	9.4	12.7	14.7	13.7
	2400	13.2	11.8	9.9	9.9	10.3	12.4	12.1	14.0	16.3	17.6	8.8	7.4	17.6	11.3	11.4	11.5
	0300	7.7	9.7	7.5	9.4	10.6	11.6	11.6	12.3	13.0	8.4	6.9	5.6	4.6	8.7	10.7	13.0
	0600	11.3	9.6	9.5	8.4	10.2	11.5	10.0	10.3	9.0	6.3	4.9	5.1	5.7	10.0	12.7	12.1
	0900	11.5	10.9	11.5	11.8	13.4	15.1	15.4	13.2	12.7	6.5	7.0	6.1	8.3	13.5	15.5	13.3
AUTUMN	1200	12.0	11.4	13.3	15.2	17.0	18.1	17.7	15.0	13.7	9.5	14.0	10.9	10.9	17.2	18.6	13.4
	1500	10.3	11.5	10.9	15.0	16.7	17.8	17.4	14.5	12.8	11.1	14.2	11.7	15.3	15.7	13.8	12.4
	1800	9.4	10.3	11.7	13.7	15.4	16.4	17.2	14.8	15.5	13.5	8.0	12.8	10.9	10.5	10.9	11.6
	2100	8.8	7.8	8.4	8.8	10.2	10.6	11.6	10.7	14.6	11.7	10.5	9.3	21.3	12.3	10.6	9.9
	2400	16.0	6.9	11.4	9.9	10.3	8.3	9.1	12.3	7.8	4.4	3.8	6.2	3.7	7.4	13.6	14.2
	0300	9.5	8.0	7.4	8.2	9.7	10.8	10.6	8.6	10.0	10.6	8.0	6.7	7.4	9.3	11.5	13.4
	0600	10.2	9.8	7.3	9.1	9.9	11.3	12.7	9.5	11.0	8.6	8.0	5.6	6.4	8.5	14.7	12.1
	0900	16.5	10.1	8.4	11.1	12.2	14.6	12.9	12.6	11.4	9.3	8.2	6.3	7.1	11.5	17.2	13.8
WINTER	1200	14.0	10.5	13.2	15.0	16.4	17.9	16.0	15.3	15.2	14.1	13.0	12.0	12.9	17.2	17.8	16.5
	1500	12.1	9.7	11.7	13.6	15.7	16.6	15.1	11.9	14.0	13.2	16.1	14.7	19.8	17.5	16.6	13.4
	1800	9.5	7.9	10.2	11.6	12.7	14.3	14.5	12.9	11.8	11.6	14.0	13.5	14.6	14.1	12.3	11.6
	2100	8.3	8.6	6.7	8.2	8.6	9.6	10.1	8.3	10.8	9.4	9.4	9.8	9.1	10.6	10.5	10.0
	2400	7.8	5.6	7.4	7.7	8.6	11.8	7.2	7.2	12.8	10.7	6.4	8.6	9.1	9.4	12.7	10.2
	0300	13.7	11.6	8.4	9.8	10.0	11.5	14.2	12.9	12.9	11.3	11.5	8.7	10.9	15.9	17.7	16.9
	0600	14.6	11.1	10.0	8.7	9.7	12.1	12.4	12.2	12.4	9.5	8.0	7.0	9.2	14.3	18.2	17.4
	0900	16.7	13.5	13.0	15.9	17.6	21.0	20.0	17.6	17.8	16.5	20.2	13.0	13.3	19.8	21.6	20.7
SPRING	1200	14.4	11.8	14.0	16.3	18.7	19.1	17.9	16.6	15.4	17.0	16.1	15.4	19.9	20.9	22.5	20.4
	1500	11.7	12.3	11.8	14.5	16.4	16.9	17.3	14.9	15.1	15.3	17.7	17.3	21.7	22.1	20.5	16.0
	1800	11.7	10.2	11.5	13.2	15.0	16.3	15.6	15.3	16.3	15.8	16.8	17.6	21.4	19.0	17.3	14.3
	2100	11.8	9.6	10.8	9.4	10.7	11.3	12.3	13.1	17.3	18.4	14.0	14.4	14.7	13.6	14.1	11.7
	2400	18.0	10.6	7.7	9.5	8.7	11.9	13.8	11.6	7.4	10.1	11.7	10.5	16.7	13.6	14.5	16.1

TABLE 27b(ii)

ALICE SPRINGS PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	2.8	4.5	5.6	14.9	11.2	23.8	7.9	6.5	1.8	3.3	1.3	3.1	0.8	2.5	3.7	6.5
	0600	2.2	3.1	2.9	13.3	9.5	24.0	9.2	7.1	1.8	3.9	2.2	3.9	2.1	3.3	4.2	7.1
	0900	2.6	5.4	6.8	22.6	14.0	20.3	5.3	4.3	0.8	1.4	0.9	1.9	1.0	3.6	3.3	5.9
SUMMER	1200	2.3	5.2	5.8	18.5	14.5	22.4	7.7	4.4	0.9	1.8	0.7	1.7	1.4	4.2	3.6	4.8
	1500	1.6	3.9	3.2	13.2	12.4	26.9	11.3	8.5	2.4	2.8	1.3	2.7	1.5	3.7	1.7	3.0
	1800	1.2	2.8	2.9	10.3	13.1	32.2	14.0	9.1	2.3	2.6	1.0	2.2	0.6	2.1	1.4	2.2
	2100	1.2	2.9	3.5	10.9	13.5	37.2	13.2	6.7	1.1	1.7	1.1	1.1	0.8	1.6	1.3	2.4
	2400	2.0	4.6	3.8	16.5	10.9	25.2	12.2	7.1	1.3	2.5	1.0	2.0	0.5	2.0	2.8	5.3
	0300	1.1	3.1	3.3	11.9	11.3	27.5	8.6	9.7	2.3	2.8	2.3	4.8	1.1	3.9	1.8	4.5
	0600	1.8	2.4	2.6	6.8	9.3	23.8	8.2	8.8	2.4	4.4	4.7	9.5	3.3	3.9	3.3	4.7
	0900	0.9	3.2	4.0	18.5	14.3	24.5	7.3	6.3	1.9	2.7	1.7	3.3	1.1	2.1	2.9	5.3
AUTUMN	1200	1.7	3.9	6.3	23.9	18.6	21.3	6.6	4.2	1.2	1.1	0.5	1.0	1.3	2.9	2.0	3.5
	1500	1.2	2.3	3.4	16.9	18.2	27.1	10.2	6.6	1.7	2.0	1.0	2.0	1.2	3.0	1.4	1.7
	1800	0.7	1.0	1.9	11.9	16.0	40.1	12.1	6.5	2.0	1.7	0.6	1.2	0.6	1.8	0.8	1.2
	2100	0.8	1.4	2.4	12.9	13.7	42.3	12.7	7.1	1.7	0.6	0.2	0.4	0.1	1.1	0.9	1.7
	2400	1.4	3.7	2.8	15.9	14.0	22.4	12.6	10.7	1.9	1.4	1.9	1.4	1.4	1.4	1.4	5.6
	0300	2.2	2.8	1.7	8.7	4.8	14.8	6.1	7.9	3.1	6.2	5.0	13.0	3.8	8.1	4.3	7.5
	0600	1.5	2.6	1.4	6.9	4.3	11.3	4.7	7.4	3.6	7.3	6.6	15.4	3.5	7.7	7.2	8.5
	0900	1.4	2.3	1.8	12.5	9.3	13.5	6.2	8.5	3.4	5.5	5.1	7.0	2.6	6.6	4.8	9.4
WINTER	1200	1.6	3.3	5.4	21.7	13.8	17.8	5.6	5.2	2.5	3.0	1.7	2.0	1.6	5.6	4.0	5.2
	1500	0.9	2.1	3.2	15.5	13.5	20.4	7.9	6.8	3.1	4.3	1.9	3.2	3.3	6.5	3.5	4.0
	1800	0.7	0.8	1.2	12.1	14.2	29.8	10.0	8.1	2.6	3.8	1.4	3.1	2.2	5.1	2.2	2.7
	2100	1.2	2.4	3.1	14.2	11.0	26.1	11.7	10.2	2.7	2.1	1.1	1.6	1.4	4.2	2.7	4.4
	2400	2.1	2.9	3.7	9.5	9.1	14.4	7.4	9.5	4.1	3.3	3.7	5.8	5.8	6.6	4.9	7.4
	0300	2.1	3.9	5.1	12.7	8.1	15.6	6.4	7.9	3.7	4.7	3.5	5.9	1.6	5.6	5.1	7.9
	0600	2.9	4.2	3.5	10.0	5.6	14.2	7.3	9.6	3.6	5.3	3.7	6.6	2.0	6.4	4.8	10.5
	0900	2.7	5.9	7.5	22.1	10.7	15.7	5.2	5.4	1.7	2.5	1.3	1.6	1.0	3.6	4.4	8.9
SPRING	1200	2.6	5.2	4.8	18.3	11.1	15.7	5.8	5.0	1.8	2.3	1.2	2.3	2.2	7.6	7.2	6.9
	1500	1.8	2.8	3.4	12.0	9.4	19.7	7.9	7.2	3.4	4.3	2.2	4.3	3.9	8.5	4.7	4.5
	1800	1.1	2.0	2.2	11.1	11.8	24.6	10.2	8.8	3.2	4.4	1.8	3.3	3.6	6.1	2.9	2.9
	2100	1.4	2.9	3.5	13.2	12.3	28.0	9.8	8.6	1.9	2.1	1.0	2.4	1.6	3.4	2.7	5.1
	2400	1.8	5.3	5.6	14.4	10.6	14.7	7.6	8.9	1.3	2.3	3.8	3.8	2.0	4.3	6.8	6.8

TABLE 27c(i)

AMBERLEY MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	7.4	10.5	8.9	9.1	7.8	9.3	9.4	7.7	6.0	6.7	7.1	10.7	8.8	7.8	5.6	8.9
	0600	10.6	8.6	10.0	9.7	9.7	9.3	9.1	7.3	6.6	6.3	9.3	7.6	7.9	8.2	11.1	8.3
	0900	8.1	9.4	11.2	12.3	14.4	12.9	14.1	12.1	9.1	7.1	8.5	9.3	9.9	10.1	10.2	8.8
SUMMER	1200	10.2	13.3	14.1	15.1	16.4	14.9	16.1	13.0	12.0	10.3	9.8	12.6	12.4	10.9	11.7	9.1
	1500	15.2	18.7	20.5	18.2	17.7	16.9	17.3	15.2	11.6	13.6	16.8	14.5	14.2	12.2	13.8	10.9
	1800	18.2	21.3	22.1	18.6	16.7	16.1	17.4	16.2	14.7	16.3	13.6	14.5	12.6	12.1	12.2	13.8
	2100	5.3	11.7	12.1	10.4	11.1	11.5	11.7	13.0	13.4	12.9	9.8	10.1	12.2	9.3	9.3	10.3
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	6.9	9.1	6.7	11.2	15.2	9.7	8.5	7.2	7.1	7.4	7.6	12.0	8.8	8.4	6.2	5.6
	0600	3.7	6.3	7.6	11.9	7.1	9.0	8.2	7.4	6.9	6.3	7.6	10.7	10.0	7.8	8.7	6.6
	0900	4.8	9.9	10.0	11.8	13.3	13.0	12.7	10.1	8.6	7.9	11.6	12.8	10.8	9.4	9.1	6.8
AUTUMN	1200	7.9	10.0	12.5	13.6	15.1	15.6	15.7	13.6	12.1	12.1	14.4	14.7	14.0	10.6	9.7	7.7
	1500	10.6	13.6	15.3	15.7	16.8	15.6	15.7	14.4	11.2	13.6	18.4	17.2	13.3	10.1	11.5	8.4
	1800	10.3	14.7	14.7	13.0	13.4	12.1	12.7	11.4	11.2	9.6	11.9	11.4	9.2	8.9	6.6	8.4
	2100	6.0	8.8	8.6	8.5	10.4	9.0	10.4	8.1	8.7	8.8	9.7	10.3	8.8	7.8	8.3	9.6
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	3.3	7.4	7.1	14.2	12.7	11.0	7.9	8.1	6.8	8.9	14.1	12.7	11.1	9.2	7.6	7.5
	0600	9.3	7.2	7.4	13.6	10.6	10.0	7.4	7.3	7.1	8.3	10.5	12.5	10.2	9.4	9.4	7.7
	0900	9.1	6.5	9.4	13.2	12.3	9.8	11.8	10.3	8.8	8.2	14.1	14.8	12.9	10.4	8.2	6.5
WINTER	1200	10.2	8.1	12.3	13.1	14.5	14.2	15.3	13.3	11.6	12.9	19.2	17.7	14.9	11.5	10.9	9.1
	1500	10.9	11.7	13.6	14.2	15.5	14.0	15.4	12.6	12.0	16.0	20.3	19.2	15.4	11.1	10.8	9.0
	1800	9.9	11.7	11.7	11.2	11.2	11.7	11.4	10.4	10.3	11.1	12.8	11.9	10.9	8.0	7.4	6.5
	2100	7.6	8.0	7.9	7.7	12.4	8.8	8.8	9.4	7.1	11.0	12.1	10.9	9.5	7.9	7.4	5.4
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	5.6	8.9	7.5	7.9	10.1	8.8	7.7	7.9	6.8	8.3	7.9	11.6	12.0	8.5	9.7	7.5
	0600	6.6	7.6	8.7	7.0	8.4	9.4	8.3	7.0	6.3	8.3	11.1	9.9	10.5	9.9	8.3	8.4
	0900	8.3	9.9	9.9	11.3	12.5	12.6	12.6	11.6	10.6	10.9	14.2	13.7	12.7	11.3	13.0	10.0
SPRING	1200	12.0	12.2	14.1	12.8	14.3	12.3	13.6	12.8	10.9	15.1	21.2	17.8	15.8	13.2	14.2	10.5
	1500	16.4	20.3	20.6	17.4	16.2	14.3	16.3	14.1	13.8	18.5	22.9	20.5	16.9	13.3	15.9	11.6
	1800	16.2	19.5	20.2	17.7	15.2	14.7	16.0	13.6	14.6	13.2	14.7	12.5	12.8	11.2	13.4	10.2
	2100	9.5	10.8	10.7	9.4	8.5	8.4	9.9	9.5	11.2	10.0	10.6	11.1	10.1	8.7	7.8	13.5
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 27c(ii)

AMBERLEY PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	0.9	3.6	4.9	7.4	4.2	13.4	10.7	28.4	8.8	6.8	1.4	1.8	1.8	3.4	1.4	1.4
	0600	1.0	4.9	3.7	6.6	3.3	10.3	10.8	31.0	6.7	6.6	1.3	3.4	2.1	5.9	1.3	1.1
	0900	2.0	5.6	7.4	12.0	9.9	14.4	8.4	10.2	2.1	2.0	1.1	3.5	4.0	10.4	3.3	3.8
SUMMER	1200	3.3	10.7	11.3	18.2	9.5	9.9	5.8	5.1	1.2	1.6	1.3	3.9	3.1	7.5	3.1	4.6
	1500	3.2	22.7	22.5	16.9	7.1	6.9	3.9	3.0	0.8	0.9	1.2	1.7	1.3	3.3	2.0	2.5
	1800	1.8	24.4	33.3	20.5	5.2	4.6	2.9	1.9	0.5	0.7	0.9	0.7	0.4	0.5	0.6	0.8
	2100	0.4	14.0	28.8	26.6	8.5	7.2	4.0	4.9	1.1	1.2	0.8	0.8	0.3	0.5	0.5	0.5
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	0.5	1.2	1.5	3.2	1.8	5.4	9.2	27.9	10.8	8.7	3.1	7.2	7.2	8.7	2.2	1.5
	0600	0.4	1.0	1.3	3.5	1.6	5.5	9.6	24.0	12.6	9.4	2.5	8.2	7.1	7.9	1.7	3.8
	0900	0.6	1.1	1.8	3.9	4.2	12.3	14.7	21.6	5.6	4.8	2.9	6.6	5.9	10.6	1.9	1.5
AUTUMN	1200	1.6	5.1	6.4	13.3	10.1	12.8	8.0	7.9	1.8	3.5	3.3	8.2	4.7	6.8	3.1	3.5
	1500	2.4	10.4	13.7	16.1	9.0	9.2	5.9	5.2	1.0	3.2	3.8	7.5	2.8	4.6	2.2	2.9
	1800	1.6	17.0	25.0	17.1	7.0	5.6	5.3	5.0	0.7	2.0	3.1	5.5	2.5	1.4	0.4	0.7
	2100	1.0	6.4	16.1	17.0	7.0	9.5	6.3	12.4	3.7	3.0	3.3	8.0	2.1	2.4	0.8	1.0
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	0.5	1.0	0.8	1.9	1.0	2.5	3.9	16.5	7.4	9.2	6.2	17.6	10.1	14.3	4.4	2.6
	0600	0.8	1.3	0.9	1.8	0.9	2.3	3.7	15.9	5.7	8.2	3.6	18.0	13.7	17.1	4.6	1.6
	0900	0.7	0.6	0.8	1.0	1.3	2.3	5.5	17.2	6.3	5.4	5.8	17.6	12.5	16.3	3.6	3.2
WINTER	1200	1.7	2.6	3.0	5.6	3.9	6.0	6.2	8.9	3.7	6.5	7.4	16.2	8.3	12.4	3.6	3.9
	1500	2.5	5.6	6.2	6.6	3.9	6.4	5.1	5.6	2.0	5.8	10.3	17.2	6.1	8.0	3.6	5.3
	1800	2.2	12.9	14.5	7.7	2.6	4.3	4.4	5.3	1.5	5.0	9.6	17.9	5.2	4.4	1.1	1.4
	2100	1.2	5.5	6.9	6.3	1.1	3.3	4.8	11.0	5.0	6.2	9.9	19.3	8.1	8.3	1.9	1.5
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	0.6	2.6	3.1	6.6	2.8	5.1	6.6	21.7	5.7	11.4	5.1	8.0	7.1	8.6	3.1	2.0
	0600	1.5	2.9	2.2	4.3	2.1	4.6	5.1	20.8	9.0	7.6	3.0	10.8	7.1	11.5	4.6	2.9
	0900	2.1	5.2	5.4	8.0	4.8	7.2	6.5	8.8	3.6	4.0	3.8	8.4	6.2	14.9	6.2	5.0
SPRING	1200	3.9	11.1	9.3	9.8	4.3	5.9	2.9	3.8	1.6	4.1	5.2	9.7	5.2	11.2	5.6	6.3
	1500	3.5	19.5	20.3	10.6	3.6	3.6	1.9	2.6	0.9	3.8	5.8	8.3	3.6	5.2	3.2	3.7
	1800	2.3	22.5	35.4	13.8	2.6	1.8	1.1	1.5	1.1	4.9	4.6	4.2	1.2	0.8	0.9	1.2
	2100	1.4	13.3	23.5	24.7	6.5	4.4	4.3	4.9	2.3	3.9	2.5	3.9	1.4	1.4	0.8	0.8
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 27d(i)

BROOME MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	8.1	9.8	13.5	14.3	12.9	19.2	13.8	13.1	10.5	11.2	12.3	13.0	13.5	14.2	13.8	9.4
	0600	8.4	8.8	10.3	12.3	14.5	13.0	15.8	11.3	10.0	10.3	12.4	12.0	13.5	13.8	13.2	9.2
	0900	14.4	13.7	16.6	14.6	14.5	11.6	10.3	9.9	13.2	14.3	15.1	14.1	14.6	15.7	16.8	13.4
SUMMER	1200	17.8	17.9	19.8	20.6	18.8	12.6	12.9	9.4	12.1	14.7	17.4	17.0	18.2	20.6	23.1	21.7
	1500	16.9	17.8	19.7	20.8	20.6	14.9	16.9	9.8	14.1	17.4	20.7	20.7	21.4	23.1	25.0	20.1
	1800	15.0	14.4	17.0	19.1	18.7	20.4	21.9	11.9	13.2	16.1	16.5	16.5	17.8	19.0	20.9	14.1
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	9.3	12.6	14.1	16.3	15.2	21.2	9.3	13.3	12.1	10.0	10.8	12.6	13.5	13.3	15.8	11.2
	0300	6.4	6.7	8.8	9.1	13.5	16.7	14.6	9.2	7.6	8.9	8.4	9.3	11.0	11.2	10.6	7.6
	0600	7.3	6.3	9.0	8.4	11.2	13.5	12.0	8.7	9.5	8.4	8.8	8.9	12.2	12.9	7.4	9.9
	0900	13.2	10.6	14.8	16.4	15.4	11.5	9.3	10.2	12.4	12.7	12.7	12.0	13.7	14.0	15.1	13.4
AUTUMN	1200	17.3	16.8	18.2	19.1	18.8	13.8	11.0	8.8	11.4	11.5	14.1	14.0	14.4	17.9	21.6	14.1
	1500	18.1	15.0	15.9	15.3	16.3	13.3	11.3	9.5	11.5	15.3	16.8	17.3	18.6	19.2	23.0	21.4
	1800	12.1	11.0	11.0	9.3	11.6	10.2	14.2	8.0	9.3	10.5	11.8	11.2	12.6	13.1	13.3	13.2
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	6.7	8.1	10.1	10.2	13.6	17.5	14.4	9.4	8.5	7.5	8.9	8.9	11.1	10.2	7.4	7.3
	0300	4.8	6.1	5.5	7.9	12.0	16.6	13.0	7.7	9.9	5.7	6.2	4.3	9.3	5.0	3.7	6.4
	0600	4.0	4.6	7.0	9.0	11.6	13.0	11.3	8.4	7.5	5.6	5.9	6.6	1.9	5.6	12.4	7.4
	0900	7.7	11.3	15.0	17.7	17.1	12.0	9.2	8.8	12.1	12.6	11.9	8.7	10.9	11.3	10.9	15.2
WINTER	1200	11.3	16.7	19.4	20.8	20.1	15.1	10.7	9.0	10.0	12.0	13.8	12.3	13.1	16.0	20.7	20.4
	1500	12.2	12.8	15.5	15.8	17.6	15.3	12.2	10.8	11.7	14.7	16.0	14.8	17.4	19.3	21.1	17.6
	1800	5.3	5.7	9.0	9.4	10.5	11.8	10.7	8.9	8.9	11.0	10.5	8.4	9.6	9.4	9.5	8.1
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	3.8	4.2	7.5	8.2	12.9	15.5	12.4	8.1	7.7	5.8	5.9	6.1	6.4	4.4	4.9	4.2
	0300	4.5	5.2	6.8	8.1	14.1	16.3	14.1	9.1	10.3	8.2	9.5	9.8	11.9	10.4	9.3	6.4
	0600	6.9	5.2	8.1	8.5	10.8	11.8	12.0	8.7	10.0	8.3	9.7	10.5	11.1	8.1	8.6	4.7
	0900	10.3	9.9	15.1	19.8	18.6	12.9	9.3	10.5	12.9	14.2	15.2	13.5	12.7	13.1	14.2	9.2
SPRING	1200	19.0	17.0	21.1	21.0	19.2	16.2	13.7	11.2	11.9	16.1	18.0	17.5	18.1	20.5	21.3	12.1
	1500	24.7	18.0	15.3	15.5	18.1	15.0	14.5	13.0	15.5	20.3	22.3	21.7	22.7	25.3	26.3	22.6
	1800	13.4	17.3	18.9	16.0	13.5	15.2	14.2	12.1	14.2	15.8	16.9	14.8	15.5	16.4	19.1	14.3
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	3.7	6.6	8.8	7.7	15.4	17.0	16.0	8.5	8.9	8.5	8.6	9.3	9.9	11.6	8.7	7.6

TABLE 27d(ii)

BROOME PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	2.0	3.9	2.5	3.1	2.0	2.7	1.0	2.1	2.8	8.8	12.6	27.4	13.1	10.6	2.6	2.8
	0600	1.9	4.9	2.8	5.3	2.8	4.1	1.9	5.1	3.9	10.9	13.6	22.7	9.0	6.0	2.4	2.6
	0900	2.0	3.3	2.4	4.8	3.5	7.6	4.2	6.0	4.7	9.9	9.7	17.3	9.9	9.7	3.2	2.0
SUMMER	1200	1.0	2.2	1.4	2.9	1.7	5.1	2.5	4.4	1.7	5.7	10.3	28.9	17.6	11.5	2.0	1.1
	1500	0.7	1.3	1.4	1.6	1.3	1.1	0.9	1.9	0.9	4.3	10.3	34.8	20.8	13.9	2.7	2.0
	1800	1.3	1.2	1.4	1.3	0.6	0.8	0.6	0.7	0.7	4.3	9.7	32.6	20.4	18.1	4.0	2.2
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	2.3	2.8	1.7	2.9	0.3	1.8	0.2	1.2	1.7	6.8	10.7	31.2	15.2	13.7	4.1	3.3
	0300	1.5	3.2	4.4	14.2	10.9	13.5	3.9	5.7	3.2	10.4	7.8	11.3	4.9	2.9	0.9	1.5
	0600	1.6	3.2	4.4	20.6	15.8	15.0	4.2	7.7	4.4	6.3	5.3	6.2	2.0	1.8	0.4	1.2
	0900	0.7	2.6	6.0	21.9	15.4	17.2	6.2	7.4	3.1	4.5	2.9	4.6	2.4	2.8	1.0	1.3
AUTUMN	1200	0.7	3.1	7.5	13.6	9.5	13.1	5.7	7.1	2.9	5.7	6.1	13.3	6.8	3.4	1.0	0.6
	1500	0.7	1.6	3.0	5.9	6.3	10.5	6.2	5.2	2.5	5.2	9.2	25.9	10.4	5.3	1.1	0.9
	1800	1.2	1.1	1.9	4.7	4.1	5.0	1.9	2.3	2.1	9.7	13.0	22.7	12.5	12.3	3.5	1.9
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	2.2	3.5	3.0	7.9	9.3	10.8	2.7	2.9	3.9	8.1	8.4	17.4	7.9	6.5	2.1	3.3
	0300	0.9	1.3	2.4	18.0	24.2	26.8	7.2	8.2	3.1	3.4	1.1	1.5	0.3	0.3	0.3	1.0
	0600	0.5	2.5	4.1	28.5	28.0	20.4	5.1	5.8	1.6	1.3	0.5	0.6	0.0	0.1	0.1	0.8
	0900	0.4	1.4	5.9	30.2	24.2	23.4	4.6	5.0	1.2	0.9	0.4	0.6	0.3	0.5	0.5	0.5
WINTER	1200	0.5	2.5	7.8	17.3	13.3	20.9	9.4	9.6	2.3	3.9	2.5	5.1	2.1	1.9	0.6	0.2
	1500	0.3	0.8	2.2	4.7	7.3	13.6	10.3	12.0	4.5	8.1	9.6	17.8	5.1	3.0	0.4	0.1
	1800	0.3	0.3	1.0	5.1	6.7	8.6	3.2	4.7	5.4	19.4	13.4	15.0	6.0	7.6	2.6	0.6
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	1.4	2.0	1.4	9.7	17.8	28.6	8.6	11.4	4.4	5.6	2.1	2.2	1.1	1.8	0.8	1.0
	0300	0.8	1.5	0.9	2.5	4.3	7.0	3.3	6.3	6.2	15.8	15.9	20.2	7.8	4.5	1.6	1.3
	0600	1.4	2.8	1.8	6.3	7.3	10.3	3.9	9.4	6.8	14.4	12.1	13.7	4.4	2.8	1.1	1.7
	0900	0.4	1.1	1.9	8.0	8.8	12.2	5.1	9.2	6.3	9.3	7.6	13.7	5.8	7.6	2.3	0.7
SPRING	1200	0.1	0.7	1.3	2.7	3.9	7.8	5.6	4.5	1.6	4.2	9.3	32.4	15.8	9.0	1.0	0.2
	1500	0.1	0.3	0.3	0.5	0.6	1.8	2.9	4.3	2.1	5.1	13.0	36.6	19.5	11.4	1.3	0.2
	1800	0.3	0.2	0.2	0.4	0.4	0.9	0.9	0.9	1.5	9.2	16.7	29.9	16.6	17.3	4.0	0.7
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	0.6	0.9	0.6	1.6	1.9	4.7	1.8	4.0	4.5	11.8	15.4	26.4	12.2	9.4	2.9	1.4

TABLE 27e(i)

CAIRNS MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	8.7	25.9	3.7	10.4	9.7	8.4	8.7	10.5	11.6	9.0	7.0	10.7	7.6	7.7	7.8	11.2
	0600	8.1	8.4	9.3	10.8	10.2	8.9	9.4	10.5	11.0	9.9	13.8	10.6	8.0	8.8	6.7	9.9
	0900	9.6	8.0	10.1	7.0	7.9	9.8	10.6	10.9	10.9	9.3	11.9	19.0	10.6	9.6	11.1	10.8
SUMMER	1200	13.2	12.6	12.0	12.8	15.0	16.8	16.7	14.6	13.6	10.1	11.1	11.1	10.4	13.9	13.4	14.7
	1500	13.2	13.8	15.2	15.7	18.9	20.2	17.4	15.0	13.2	12.5	19.4	10.7	13.4	12.6	14.5	14.2
	1800	8.5	8.0	9.0	10.6	14.7	16.9	16.4	13.2	11.4	9.5	8.9	12.4	10.3	10.0	9.4	9.6
	2100	8.3	6.9	7.7	11.8	10.4	12.1	11.5	10.6	10.1	8.6	12.6	11.8	10.0	8.4	9.7	11.0
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	9.3	5.6	3.7	10.5	9.3	9.8	11.0	13.9	13.9	12.8	14.2	16.1	5.1	12.9	13.7	15.4
	0600	9.3	0.0	0.0	9.3	14.5	10.0	11.9	14.3	14.0	12.9	0.0	13.9	0.0	10.2	8.8	10.2
	0900	3.7	3.7	11.1	10.2	7.6	12.2	14.3	14.9	14.5	12.8	11.1	11.1	3.7	13.3	14.5	9.5
AUTUMN	1200	10.8	10.0	9.9	9.6	15.4	19.7	19.4	16.7	15.4	13.0	7.5	9.7	10.9	18.1	12.5	11.6
	1500	10.2	12.0	12.7	12.2	17.5	20.6	20.6	17.4	15.3	10.3	27.8	7.4	21.3	22.0	11.0	12.0
	1800	6.8	6.7	8.0	8.3	14.3	15.2	15.4	14.3	12.9	9.1	6.9	11.1	21.5	9.9	8.4	8.8
	2100	17.9	13.0	19.5	14.8	8.5	13.6	14.0	14.2	12.6	11.0	11.1	8.1	11.6	20.0	5.3	9.0
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	0.0	14.8	0.0	0.0	9.0	11.1	13.5	14.9	14.8	13.4	18.5	0.0	0.0	0.0	0.0	16.7
	0600	7.4	11.1	0.0	9.3	9.5	11.3	13.2	15.3	14.9	13.5	0.0	0.0	0.0	0.0	6.5	12.0
	0900	0.0	7.4	0.0	13.0	10.8	11.9	14.9	16.3	15.4	14.1	7.5	11.1	14.8	10.6	18.5	5.6
WINTER	1200	10.1	10.3	9.4	9.5	15.2	20.4	19.5	17.7	15.1	12.3	9.3	0.0	0.0	5.6	15.3	11.0
	1500	10.6	12.8	13.5	14.1	18.1	21.0	21.0	18.3	16.2	13.6	5.6	0.0	0.0	10.2	12.3	11.6
	1800	5.0	6.0	7.7	8.1	12.0	15.8	15.5	13.8	11.9	8.4	5.2	5.1	7.9	7.6	6.6	4.9
	2100	0.0	0.0	18.5	0.0	11.6	12.9	14.6	14.7	13.2	11.6	8.3	1.9	0.0	3.7	0.0	9.3
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	10.5	4.3	0.0	8.6	12.4	9.8	10.0	11.1	11.5	10.2	10.5	5.6	5.3	7.2	9.8	8.9
	0600	3.8	10.2	0.0	1.9	10.9	9.9	9.9	12.0	11.8	10.0	14.8	8.3	8.8	7.0	5.6	6.5
	0900	11.2	8.0	5.9	7.0	10.0	12.7	13.2	13.0	12.0	10.4	0.0	3.7	5.2	9.6	9.4	11.3
SPRING	1200	14.4	14.6	14.7	14.8	18.8	21.7	21.0	17.2	15.9	11.4	7.5	3.7	0.0	15.8	18.2	16.2
	1500	14.6	16.0	17.5	18.6	21.2	23.3	23.3	18.4	17.4	10.5	0.0	18.5	19.5	15.4	15.4	14.4
	1800	7.1	7.8	8.6	10.9	15.4	17.5	17.4	14.0	11.8	11.3	0.0	13.0	12.4	8.9	7.7	7.8
	2100	5.9	6.1	5.2	5.7	6.6	12.8	12.0	10.9	9.7	8.0	9.3	3.3	4.2	7.3	6.6	7.0
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 27e(ii)

CAIRNS PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	0.2	0.1	0.2	0.3	0.2	4.6	10.6	51.4	20.9	5.6	0.8	0.7	0.7	1.7	0.7	1.3
	0600	0.2	0.1	0.1	0.5	0.2	5.8	12.4	51.0	19.9	5.7	0.6	0.6	0.7	1.1	0.5	0.8
	0900	1.5	1.3	0.4	1.3	1.3	11.5	16.4	42.7	12.2	3.1	0.6	0.3	0.6	2.6	1.2	2.9
SUMMER	1200	9.5	17.1	7.6	6.8	7.9	19.3	6.1	7.2	2.1	1.0	0.2	0.4	0.5	1.8	1.8	10.7
	1500	11.5	16.7	6.1	8.1	9.3	16.3	4.5	6.3	2.3	0.9	0.4	0.4	0.4	1.1	2.3	13.2
	1800	5.5	7.2	4.5	7.5	6.2	23.3	7.3	14.1	4.4	2.0	0.2	0.5	0.4	2.5	2.7	11.8
	2100	0.8	0.7	0.4	1.3	0.7	4.9	6.9	42.8	21.6	7.3	0.7	1.3	1.0	3.9	1.5	4.3
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	0.1	0.1	0.0	0.1	0.5	7.7	13.0	54.4	19.2	3.8	0.1	0.1	0.2	0.4	0.2	0.1
	0600	0.0	0.0	0.0	0.2	0.4	7.5	14.0	53.0	19.9	4.1	0.0	0.2	0.0	0.5	0.2	0.2
	0900	0.1	0.0	0.0	0.1	0.3	8.3	17.9	53.3	15.9	2.8	0.0	0.1	0.0	0.5	0.2	0.4
AUTUMN	1200	2.8	5.4	2.8	3.8	7.6	34.7	16.2	17.4	3.7	1.2	0.1	0.1	0.2	0.4	0.4	3.0
	1500	3.9	7.4	3.7	5.1	11.7	34.1	12.9	10.9	3.4	0.8	0.0	0.0	0.1	0.4	1.0	4.7
	1800	0.8	1.4	0.7	1.6	2.4	25.4	20.0	30.6	9.5	3.0	0.3	0.0	0.2	0.9	0.7	2.5
	2100	0.1	0.0	0.1	0.2	0.3	2.5	9.0	53.2	27.4	5.5	0.0	0.1	0.2	0.4	0.3	0.6
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	0.0	0.0	0.0	0.0	0.3	7.6	12.5	53.7	21.2	4.5	0.0	0.0	0.0	0.0	0.0	0.0
	0600	0.0	0.0	0.0	0.1	0.3	8.0	14.5	52.4	19.6	5.1	0.0	0.0	0.0	0.0	0.1	0.1
	0900	0.0	0.0	0.0	0.1	0.3	9.1	18.2	54.3	14.4	3.4	0.1	0.0	0.0	0.1	0.0	0.0
WINTER	1200	2.1	4.6	2.2	5.2	7.8	36.9	18.9	16.8	2.7	0.6	0.1	0.0	0.0	0.1	0.2	1.8
	1500	3.8	8.6	3.9	7.7	13.8	36.3	11.9	7.8	1.7	0.5	0.0	0.0	0.0	0.1	0.5	3.3
	1800	0.5	1.1	0.6	1.6	2.4	22.2	23.6	31.2	9.7	4.1	0.2	0.2	0.3	0.4	0.5	1.5
	2100	0.0	0.0	0.0	0.0	0.2	1.8	6.2	53.7	30.0	7.9	0.2	0.0	0.0	0.0	0.0	0.0
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	0.1	0.3	0.0	0.1	0.4	9.0	15.5	49.7	18.5	3.8	0.1	0.1	0.4	0.7	0.5	0.7
	0600	0.1	0.1	0.0	0.0	0.3	9.4	15.4	53.0	16.7	3.6	0.0	0.2	0.3	0.4	0.2	0.3
	0900	1.2	1.7	0.4	1.9	3.1	17.1	18.3	40.5	9.5	2.2	0.0	0.1	0.2	0.6	0.8	2.4
SPRING	1200	10.1	18.6	7.2	7.4	14.0	26.7	4.7	3.2	0.7	0.2	0.1	0.0	0.0	0.1	0.6	6.3
	1500	11.6	17.6	6.1	11.3	14.9	22.9	3.4	2.3	0.8	0.1	0.0	0.0	0.1	0.1	0.8	8.2
	1800	6.2	8.2	4.4	7.6	8.0	30.5	11.4	8.4	2.6	1.0	0.0	0.1	0.1	1.1	2.0	8.7
	2100	0.6	0.6	0.3	0.9	0.5	4.4	8.9	48.0	26.0	5.7	0.2	0.2	0.2	0.9	0.7	1.9
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 27f(i)

CANBERRA MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	6.3	7.1	7.8	7.4	7.2	8.2	9.7	10.4	10.7	21.3	19.0	17.8	16.1	14.0	14.8	8.1
	0600	5.3	6.9	6.3	6.6	8.0	7.9	9.3	11.6	8.2	7.7	16.7	14.8	18.7	16.5	15.1	7.9
	0900	6.9	7.9	9.4	10.1	11.2	12.6	12.9	13.0	8.3	6.7	8.7	15.3	17.1	17.0	15.0	7.5
SUMMER	1200	7.8	10.0	12.0	12.9	16.1	14.9	15.7	15.4	12.0	7.3	13.3	18.8	21.1	18.9	14.5	9.4
	1500	10.1	13.0	15.2	17.9	17.6	16.2	16.3	15.5	14.7	13.3	18.3	22.4	22.4	19.4	15.4	10.7
	1800	12.5	15.5	20.0	21.5	21.4	16.8	17.4	16.2	13.9	15.7	17.0	20.2	18.2	15.0	13.7	12.4
	2100	9.3	10.9	13.1	12.9	13.0	11.0	13.0	10.6	9.0	17.8	11.9	15.1	12.6	11.5	11.1	7.9
	2400	6.6	8.1	6.9	8.8	8.2	8.7	10.6	10.8	9.3	15.5	16.7	16.3	13.7	14.5	14.4	8.0
	0300	6.6	5.8	6.6	6.8	7.2	7.8	10.3	13.0	10.4	9.8	12.5	18.1	19.3	19.4	15.9	10.4
	0600	6.7	7.3	6.3	6.9	7.0	7.7	11.0	12.5	8.6	6.5	0.0	20.7	20.5	19.3	16.5	10.3
	0900	7.0	8.1	9.3	7.3	9.2	8.7	12.3	14.2	11.3	6.7	13.1	19.2	19.4	19.7	18.3	9.8
AUTUMN	1200	8.7	9.1	10.5	11.5	13.0	13.2	15.6	15.9	10.6	7.9	8.9	17.2	20.1	18.7	14.3	8.7
	1500	8.9	10.4	13.3	14.7	14.6	14.9	17.6	16.0	12.6	10.4	15.3	19.9	21.6	18.2	13.9	10.5
	1800	7.4	9.5	13.3	14.9	13.3	12.1	15.5	14.3	11.5	9.1	13.4	16.2	16.2	16.0	11.5	8.7
	2100	6.4	7.4	9.9	9.5	10.4	10.4	13.0	13.7	9.5	8.3	9.3	16.0	18.2	16.6	13.4	8.6
	2400	7.8	7.0	6.8	7.1	8.3	7.3	8.6	11.8	13.0	7.4	23.0	19.1	20.4	17.7	15.5	9.0
	0300	7.8	6.3	9.7	5.7	7.7	8.1	12.9	16.4	13.2	6.8	11.7	19.9	22.7	20.7	17.7	12.1
	0600	8.5	7.6	7.8	8.5	7.3	9.2	12.8	14.0	10.0	8.4	10.2	21.3	21.3	22.2	18.4	12.5
	0900	6.7	10.3	9.9	8.2	8.6	8.5	14.1	16.2	11.1	8.4	8.4	20.4	22.9	22.2	20.7	12.0
WINTER	1200	13.6	11.1	13.9	14.3	17.4	15.0	16.3	18.9	12.3	6.2	11.4	19.9	24.2	23.1	18.9	10.4
	1500	10.0	11.3	10.2	13.6	14.3	16.3	17.3	19.9	17.4	8.3	13.5	22.1	23.6	21.4	18.0	12.5
	1800	7.9	7.0	8.6	11.0	9.8	11.4	13.5	14.8	14.2	13.7	14.5	17.9	19.1	18.6	15.4	10.1
	2100	6.9	7.7	8.7	9.6	8.7	9.1	12.6	15.4	12.7	8.0	17.8	18.6	18.6	19.7	16.6	9.4
	2400	8.4	6.9	22.2	8.4	8.4	9.3	9.4	15.3	6.2	4.7	21.6	21.3	21.4	20.9	17.0	9.9
	0300	6.9	7.2	5.7	8.1	7.6	8.0	10.2	13.6	10.9	8.0	13.0	17.0	19.5	18.8	15.8	10.3
	0600	7.0	7.3	5.7	7.4	6.9	7.9	10.7	14.6	7.7	6.7	6.8	20.2	20.8	19.3	15.6	10.6
	0900	5.4	8.9	11.1	9.8	10.4	11.7	15.3	16.3	12.7	6.7	10.5	20.7	20.8	20.4	17.1	8.7
SPRING	1200	8.5	10.0	12.6	14.5	14.9	14.2	15.2	18.5	14.5	10.3	16.9	24.6	26.0	21.5	17.2	10.8
	1500	8.2	12.5	14.1	15.4	16.1	17.4	16.0	19.2	16.3	11.8	18.3	26.9	26.8	22.6	18.9	12.3
	1800	10.5	11.4	15.8	17.0	15.5	14.9	15.8	19.7	11.6	11.1	20.5	20.6	19.0	16.7	12.9	10.8
	2100	8.3	8.8	11.1	12.3	11.6	9.5	11.2	13.1	12.5	8.2	13.2	16.9	16.1	15.2	13.6	9.5
	2400	8.0	7.7	7.7	7.3	6.9	9.2	11.6	10.7	7.2	9.8	16.3	20.2	16.3	17.8	16.2	9.3

TABLE 27f(ii)

CANBERRA PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	1.9	3.8	5.1	17.6	11.9	19.5	8.9	7.9	0.8	0.2	0.3	2.8	4.6	6.4	4.6	3.5
	0600	2.2	5.5	4.4	13.7	9.0	17.9	10.3	8.3	1.0	0.5	0.5	2.5	4.8	7.8	6.3	5.3
	0900	2.2	6.8	5.1	9.6	6.7	10.5	6.0	6.5	1.2	1.7	0.9	7.7	9.8	16.4	5.0	3.9
SUMMER	1200	3.6	6.4	4.7	7.1	4.2	5.0	1.7	2.7	0.9	1.4	2.1	10.9	14.7	22.0	7.6	5.1
	1500	3.1	6.6	5.3	8.7	5.0	3.6	1.6	2.1	0.6	1.2	2.7	15.1	13.3	18.6	6.8	5.7
	1800	2.3	7.3	11.2	17.9	6.2	4.2	1.2	2.0	0.3	1.1	2.5	15.4	9.5	11.2	4.6	3.0
	2100	2.9	9.9	10.9	26.6	12.2	9.4	2.8	2.1	0.3	0.4	1.2	5.2	4.7	5.3	2.7	3.4
	2400	2.1	4.9	5.5	26.1	13.4	14.2	5.5	3.9	0.5	0.7	0.2	4.7	4.7	5.4	2.9	5.2
	0300	1.6	1.9	1.3	5.9	4.6	13.0	10.5	8.4	1.0	1.0	0.4	3.6	7.5	23.8	9.9	5.7
	0600	1.8	2.4	1.6	4.0	5.7	14.0	8.5	9.2	1.2	1.1	0.0	2.5	8.4	22.1	11.1	6.4
	0900	1.3	2.0	2.3	4.8	5.3	16.0	10.7	11.2	1.2	1.1	0.7	4.6	7.9	19.7	8.3	3.0
AUTUMN	1200	2.1	3.6	3.3	5.1	3.2	5.3	3.9	7.2	1.2	2.1	2.2	9.2	13.6	26.6	7.6	3.7
	1500	2.1	4.1	3.6	6.5	3.6	3.8	3.2	4.6	1.0	1.3	1.8	11.6	15.3	24.8	8.9	3.8
	1800	3.0	5.8	7.9	12.9	4.1	4.6	2.7	3.3	0.4	0.5	1.0	9.1	11.8	18.4	8.6	5.9
	2100	4.1	5.8	5.3	15.3	8.5	7.0	4.2	5.0	0.4	0.4	0.5	5.1	7.8	16.9	6.9	6.8
	2400	2.2	3.0	2.5	8.6	6.8	10.6	6.8	7.0	0.3	0.3	1.0	5.8	9.1	21.8	8.3	6.0
	0300	1.3	1.9	1.0	1.0	1.9	7.7	5.4	8.2	0.6	0.4	0.5	4.7	11.8	30.7	15.4	7.7
	0600	2.1	1.8	0.7	1.4	1.7	7.4	5.2	8.9	1.2	0.6	0.1	4.1	10.0	29.6	17.1	7.9
	0900	0.8	0.9	0.4	1.3	1.6	9.4	6.5	9.8	1.0	0.8	0.7	4.2	9.2	33.6	14.4	5.4
WINTER	1200	0.7	1.2	0.5	1.4	1.6	4.8	3.6	10.9	2.2	2.6	1.7	10.8	15.6	31.6	8.4	2.3
	1500	0.9	1.6	0.9	1.8	2.4	3.7	3.0	6.6	1.6	1.0	2.0	13.2	15.4	30.6	12.0	3.4
	1800	3.8	2.9	1.9	2.9	3.3	4.2	4.0	5.6	0.5	0.8	0.8	8.4	13.9	28.5	10.2	8.2
	2100	4.1	3.9	1.5	2.0	2.7	5.6	4.2	6.2	0.4	0.4	0.4	5.1	12.2	28.5	13.4	9.6
	2400	3.1	2.5	0.3	1.6	1.7	5.1	4.1	8.3	1.0	0.4	0.3	6.6	11.6	30.7	15.4	7.3
	0300	2.0	3.4	1.9	6.0	4.6	9.1	5.9	6.5	1.2	0.7	1.4	6.3	10.5	20.4	12.8	7.3
	0600	2.4	2.6	2.0	6.0	4.9	9.4	6.2	6.4	1.0	0.6	0.2	4.4	8.6	24.1	12.1	9.1
	0900	1.3	3.6	2.2	4.0	3.2	6.7	5.5	7.6	1.5	1.6	1.8	9.8	12.8	25.7	8.5	4.2
SPRING	1200	2.3	3.4	1.8	3.1	2.1	2.9	1.8	4.0	1.3	1.3	1.6	10.6	15.1	31.1	12.3	5.1
	1500	2.0	3.1	2.5	4.0	2.2	2.4	1.6	3.2	0.6	0.7	1.5	14.1	16.2	28.2	12.8	5.0
	1800	1.7	3.6	5.5	7.6	3.3	2.6	1.4	2.1	0.6	0.6	1.9	14.6	16.2	22.9	10.1	5.3
	2100	5.4	8.3	7.6	10.6	4.5	4.8	2.0	3.2	0.4	0.2	1.1	7.8	11.4	14.5	8.2	9.9
	2400	4.5	4.0	3.0	7.7	6.7	5.0	4.3	6.8	0.9	0.8	1.1	7.9	11.2	16.9	12.0	7.4

TABLE 27g(i)

COCOS ISLAND MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	20.4	16.7	14.1	19.6	19.5	21.1	17.4	13.9	10.4	21.9	16.7	29.4	0.0	14.1	8.4	20.9
	0600	19.5	18.0	17.8	16.9	20.5	21.0	19.6	14.2	15.9	20.0	20.9	20.9	21.0	17.4	18.8	19.7
	0900	16.1	14.4	16.5	17.4	22.7	23.2	20.5	13.6	14.3	18.5	17.6	15.8	14.5	19.1	23.0	20.2
SUMMER	1200	17.0	15.6	15.4	18.2	23.3	23.7	20.4	14.3	12.6	17.2	15.9	17.2	21.1	20.0	21.2	19.1
	1500	19.7	13.2	16.1	19.0	22.6	23.1	19.5	14.7	12.9	16.2	16.5	20.6	21.0	18.4	16.5	17.7
	1800	15.9	17.1	13.4	19.2	20.6	21.2	18.4	14.2	16.0	18.0	19.9	23.2	14.3	20.1	17.2	15.2
	2100	14.3	19.1	13.4	17.9	21.1	20.8	17.4	16.1	11.1	18.9	16.3	24.6	23.1	15.5	28.6	17.7
	2400	8.6	15.5	12.0	18.8	20.2	19.5	16.7	15.5	15.4	18.3	12.6	28.3	14.8	17.1	23.6	17.9
	0300	13.0	15.2	18.0	20.1	22.0	24.3	21.9	18.4	20.4	14.2	13.0	22.9	12.0	12.2	16.7	21.6
	0600	16.2	16.2	18.0	20.8	23.8	24.6	21.1	17.7	16.8	17.6	27.0	24.8	15.7	18.8	26.1	16.3
	0900	17.1	13.4	16.0	22.2	25.4	25.9	24.2	17.1	14.7	18.0	21.8	15.9	13.5	19.8	20.4	18.0
AUTUMN	1200	17.4	14.9	15.9	23.1	26.0	26.2	24.3	15.7	15.8	13.0	19.2	13.9	17.6	17.7	21.4	19.4
	1500	15.6	14.5	17.2	22.1	25.5	25.1	23.0	15.7	14.8	14.6	10.4	15.0	16.1	15.4	19.3	16.0
	1800	18.5	14.2	17.4	21.6	22.5	23.9	22.5	18.1	15.3	19.6	14.8	11.9	16.8	12.5	22.1	12.4
	2100	14.2	14.6	18.0	22.0	23.5	23.8	21.7	22.0	23.4	17.6	17.6	34.3	17.8	11.5	19.5	22.2
	2400	24.7	14.4	16.7	20.8	22.4	23.2	20.7	15.6	13.0	24.7	19.5	18.3	11.7	14.4	27.8	17.1
	0300	17.9	17.4	19.2	24.1	26.8	28.7	26.7	18.8	9.3	0.0	0.0	0.0	0.0	5.6	20.4	20.1
	0600	14.8	16.4	20.2	24.4	27.7	29.5	28.0	25.4	29.7	12.0	0.0	14.8	27.8	9.3	28.8	18.4
	0900	14.9	16.0	18.9	25.6	29.9	30.8	30.3	23.9	14.8	10.8	18.5	48.2	0.0	13.0	17.6	22.6
WINTER	1200	16.2	17.2	19.6	26.5	30.3	31.0	30.0	24.5	12.7	15.4	17.9	12.9	7.4	21.0	19.8	20.8
	1500	16.9	14.7	19.7	26.6	29.6	30.2	29.3	20.0	16.7	17.7	41.4	18.5	11.1	17.0	17.2	20.0
	1800	19.1	16.3	19.0	24.5	27.6	29.5	28.8	20.8	24.5	3.7	9.3	5.6	8.5	7.8	21.9	13.9
	2100	18.6	18.5	19.8	24.1	27.9	31.5	29.0	18.3	25.0	0.0	0.0	0.0	0.0	36.1	18.5	26.3
	2400	20.0	19.2	17.4	24.0	26.0	28.0	28.0	23.6	14.8	23.2	0.0	14.8	5.6	14.8	0.0	24.5
	0300	23.2	16.1	14.0	25.0	25.7	26.3	25.9	22.3	18.5	1.9	0.0	55.6	0.0	0.0	0.0	23.5
	0600	22.7	18.7	20.8	23.8	26.8	27.4	25.1	18.4	30.3	11.1	24.1	43.5	22.2	0.0	27.8	21.3
	0900	27.8	18.8	20.7	26.7	30.2	29.6	26.7	20.4	0.0	17.6	1.9	25.3	0.0	37.7	22.2	20.9
SPRING	1200	26.1	19.0	20.1	27.3	30.4	29.9	26.9	21.5	20.8	11.1	0.0	22.2	17.6	51.0	19.5	19.7
	1500	26.1	19.5	21.0	27.2	29.6	29.0	26.9	20.9	19.5	8.3	18.5	30.3	30.3	18.2	17.3	16.1
	1800	22.0	19.1	17.9	25.9	27.5	27.9	26.9	23.4	15.8	25.9	21.6	79.7	11.2	13.4	0.0	17.5
	2100	16.7	24.7	15.9	26.3	27.9	28.3	28.6	18.0	13.0	0.0	13.0	83.4	15.5	9.3	3.7	19.5
	2400	19.5	15.3	16.9	25.5	26.4	26.7	25.7	17.0	13.0	0.0	0.0	55.6	0.0	0.0	0.0	22.2

TABLE 27g(ii)

COCOS ISLAND PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	1.8	0.8	1.3	10.6	19.9	38.3	11.4	5.4	2.8	1.3	1.3	1.6	0.0	1.3	1.0	1.0
	0600	0.9	1.3	1.6	8.7	20.4	38.5	11.4	5.7	2.2	1.7	1.1	1.5	0.8	1.7	0.7	1.7
	0900	1.5	2.2	1.6	9.3	19.7	35.5	11.8	7.4	1.6	1.8	1.4	1.5	1.0	1.2	0.9	1.4
SUMMER	1200	1.5	2.4	2.4	8.2	20.0	33.0	10.1	8.8	2.3	2.2	1.7	2.2	0.8	1.5	1.4	1.5
	1500	1.3	2.0	1.9	7.5	18.1	33.4	12.4	9.5	2.0	2.3	2.0	2.1	1.1	1.7	1.1	1.6
	1800	1.1	1.6	1.9	7.2	19.8	37.4	12.1	6.9	1.9	1.6	1.8	1.9	1.1	1.0	1.2	1.5
	2100	0.9	2.6	1.5	8.9	21.6	38.1	9.5	5.0	1.1	1.6	1.9	2.1	1.0	2.0	0.9	1.1
	2400	1.1	1.1	2.8	9.5	23.1	37.7	9.9	4.4	2.5	1.2	1.1	1.8	0.9	0.7	1.2	1.1
	0300	0.9	2.3	1.6	18.8	27.1	32.4	7.6	3.7	0.5	0.7	0.5	0.7	0.9	1.2	0.5	0.7
	0600	1.0	2.2	2.3	19.4	27.7	31.5	7.4	2.8	1.3	0.8	0.6	0.6	0.6	0.4	0.4	1.0
	0900	1.2	2.0	3.7	21.2	25.0	29.8	7.3	3.7	1.2	1.1	0.4	0.7	0.6	0.7	0.3	1.2
AUTUMN	1200	1.5	3.4	4.1	19.0	23.9	28.7	7.5	4.5	1.4	1.2	0.5	1.2	0.9	0.5	0.6	1.2
	1500	1.5	2.8	3.2	16.8	23.7	30.1	8.6	5.1	1.3	1.3	0.6	1.2	0.5	0.8	0.7	1.7
	1800	1.1	1.4	2.3	18.3	25.1	33.3	8.4	4.0	1.1	1.0	0.2	1.0	0.7	0.5	0.5	1.0
	2100	1.2	2.1	2.3	18.8	29.1	31.7	7.5	2.7	0.7	0.5	0.8	0.3	0.7	0.8	0.5	0.3
	2400	0.5	3.1	1.9	19.2	26.7	30.0	9.8	4.0	0.5	0.5	0.3	1.0	0.5	0.7	0.5	0.7
	0300	0.6	2.2	3.3	22.6	27.3	32.2	7.1	2.6	0.2	0.0	0.0	0.0	0.0	0.2	0.4	1.2
	0600	0.6	1.2	4.9	23.8	29.0	30.5	7.3	1.4	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.6
	0900	1.0	1.9	4.2	26.0	26.0	29.9	7.7	1.7	0.3	0.3	0.1	0.0	0.0	0.1	0.2	0.6
WINTER	1200	1.1	2.1	5.7	24.6	25.8	28.7	7.6	2.2	0.3	0.3	0.1	0.2	0.0	0.1	0.1	0.8
	1500	1.2	1.9	4.9	24.1	24.7	30.4	7.9	2.8	0.2	0.4	0.1	0.0	0.1	0.2	0.3	0.8
	1800	0.9	1.9	3.6	21.3	27.5	31.4	9.2	2.3	0.4	0.0	0.1	0.0	0.2	0.2	0.3	0.6
	2100	0.6	1.4	3.9	20.4	28.5	33.8	8.5	1.4	0.5	0.0	0.0	0.0	0.0	0.2	0.1	0.6
	2400	1.2	1.2	4.2	25.1	27.1	28.6	9.4	1.7	0.2	0.3	0.0	0.2	0.2	0.2	0.0	0.6
	0300	0.4	1.3	2.0	24.1	41.1	25.2	3.8	0.9	0.2	0.2	0.0	0.2	0.0	0.0	0.0	0.7
	0600	0.4	1.6	1.8	20.8	36.8	34.3	3.0	0.5	0.1	0.0	0.0	0.1	0.0	0.0	0.2	0.3
	0900	0.3	2.0	2.4	20.3	36.4	33.0	4.1	0.6	0.0	0.3	0.0	0.1	0.0	0.1	0.0	0.3
SPRING	1200	0.5	2.6	2.4	19.3	36.7	32.5	4.2	0.8	0.2	0.1	0.0	0.1	0.1	0.1	0.2	0.3
	1500	0.4	1.7	2.9	16.1	38.0	34.7	4.1	0.8	0.1	0.1	0.0	0.1	0.1	0.3	0.1	0.3
	1800	0.5	1.3	2.3	15.8	39.6	34.5	4.5	0.5	0.1	0.0	0.1	0.0	0.2	0.2	0.0	0.3
	2100	0.2	1.0	1.7	17.8	39.7	33.8	3.4	0.8	0.1	0.0	0.1	0.1	0.3	0.1	0.1	0.5
	2400	0.6	2.6	1.4	22.7	39.5	27.3	4.3	0.8	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.5

TABLE 27h(i)

DARWIN MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	13.7	9.6	10.2	11.4	9.5	8.3	9.1	9.9	10.7	11.3	11.9	13.5	15.4	14.2	14.1	10.6
	0600	10.5	9.2	9.4	9.4	8.5	7.8	9.8	9.5	13.3	10.4	13.2	13.4	14.2	15.3	12.0	11.1
	0900	9.6	9.4	9.0	10.1	9.5	8.8	8.3	9.1	8.1	11.6	13.2	15.2	16.5	15.6	13.5	12.1
SUMMER	1200	11.8	11.9	13.6	12.1	12.2	9.1	11.7	10.3	10.6	13.6	14.9	17.0	17.1	15.7	14.9	12.6
	1500	15.0	15.8	15.9	15.3	17.2	11.9	14.4	13.3	13.8	14.8	18.2	19.8	20.6	18.1	16.8	14.9
	1800	14.4	14.9	14.2	13.2	13.8	13.6	15.5	12.1	11.6	14.7	16.7	17.4	17.2	15.4	14.9	12.4
	2100	11.1	10.4	17.0	14.0	12.1	13.7	12.7	11.3	9.6	10.4	11.1	12.0	14.2	12.6	12.7	10.1
	2400	7.9	10.3	9.8	10.3	11.4	9.2	10.2	7.1	9.4	7.9	7.7	12.0	14.0	13.1	11.7	12.5
	0300	11.4	9.9	8.8	10.4	10.0	9.3	8.8	8.1	7.6	8.2	8.8	11.7	13.7	12.1	13.7	10.2
	0600	11.4	8.7	11.0	9.6	9.8	9.3	9.2	8.3	7.0	9.1	11.9	11.9	14.4	14.1	14.0	13.2
	0900	10.9	9.7	10.7	12.7	12.9	12.2	11.6	8.3	8.7	9.5	12.1	12.4	15.4	14.4	13.7	13.0
AUTUMN	1200	13.3	14.9	17.4	19.6	20.2	18.7	15.3	11.6	10.8	11.0	12.5	13.9	14.3	12.9	12.9	13.9
	1500	15.6	16.6	18.0	18.3	18.5	17.7	16.6	14.1	13.2	13.4	15.8	16.8	17.1	15.2	15.6	14.7
	1800	13.6	13.5	12.6	12.9	12.7	13.7	11.3	11.3	10.5	12.2	14.7	14.5	14.2	12.9	11.9	11.8
	2100	8.9	8.3	8.8	9.6	10.6	9.5	10.4	10.7	6.8	7.5	7.4	9.2	10.9	10.0	10.0	8.2
	2400	5.8	5.4	7.0	10.9	9.1	10.2	7.5	6.2	5.4	5.5	6.0	10.1	13.4	12.1	11.9	10.6
	0300	7.1	7.2	7.5	7.9	9.3	9.6	8.2	6.9	6.6	6.0	4.6	6.3	6.1	5.9	8.1	4.9
	0600	5.8	8.1	8.4	8.4	9.3	9.7	9.6	7.5	8.5	5.6	6.5	6.9	7.0	3.7	3.3	7.2
	0900	7.0	8.4	10.9	13.1	13.5	14.0	13.4	8.4	6.1	5.6	8.4	8.1	7.1	4.4	5.8	6.9
WINTER	1200	10.6	15.5	17.8	20.1	21.2	21.1	18.6	12.1	9.4	9.2	9.5	8.9	10.8	11.4	9.3	12.7
	1500	17.4	19.1	18.5	18.3	18.0	17.8	17.4	15.3	12.2	12.6	13.4	13.8	15.8	16.7	17.4	18.4
	1800	15.4	16.9	15.3	13.7	13.3	13.4	11.9	12.3	12.0	11.4	9.3	12.1	13.6	12.6	13.0	13.5
	2100	8.8	9.4	8.1	7.9	7.1	8.5	8.9	7.8	6.5	5.8	5.8	6.3	6.3	7.4	6.0	7.3
	2400	6.4	6.2	4.7	7.3	6.9	9.0	7.6	5.9	4.4	4.8	5.2	6.6	7.6	8.2	9.3	5.8
	0300	7.3	8.4	8.2	8.8	9.0	8.6	9.7	7.9	8.9	6.5	6.7	8.8	10.1	9.4	9.0	8.1
	0600	6.8	7.7	7.6	7.3	7.2	8.0	9.0	7.8	8.1	6.9	7.1	8.2	9.2	9.5	7.9	7.3
	0900	8.6	9.0	9.8	10.3	10.2	9.9	10.1	8.4	9.0	8.4	9.6	10.7	11.0	10.8	9.9	9.4
SPRING	1200	14.4	14.5	16.4	17.0	19.0	16.1	13.1	10.8	10.3	10.8	11.5	11.9	13.6	14.6	14.5	13.0
	1500	21.6	21.4	21.7	17.9	19.3	17.0	16.9	13.9	12.1	13.3	16.1	17.3	20.0	19.2	19.4	19.8
	1800	18.3	19.4	21.0	14.5	16.9	16.6	14.0	12.4	13.5	12.6	15.8	16.0	17.1	16.2	14.7	15.7
	2100	9.8	10.2	10.7	11.5	12.0	10.9	10.6	9.3	7.7	9.0	8.9	10.9	12.6	12.6	12.6	9.5
	2400	8.8	7.0	7.7	8.8	8.7	11.3	6.9	6.4	4.5	6.3	6.8	8.5	10.3	10.5	11.3	9.9

TABLE 27h(ii)

DARWIN PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	2.3	5.9	2.3	5.2	2.8	5.2	2.2	3.5	1.0	4.0	6.0	20.7	12.8	16.0	5.1	4.9
	0600	2.1	5.8	2.7	6.8	4.1	8.2	4.1	3.7	1.3	5.2	4.6	20.5	10.8	12.3	4.0	3.8
	0900	2.3	4.9	2.9	6.5	4.2	7.7	3.3	6.2	2.5	6.8	7.2	18.1	9.2	10.5	3.8	4.1
SUMMER	1200	2.2	4.3	2.9	3.7	1.5	2.3	1.7	3.8	2.9	6.4	5.0	17.4	15.2	19.0	6.5	5.0
	1500	2.0	4.0	1.9	1.8	0.7	1.4	0.8	1.8	1.2	3.7	3.8	18.0	20.1	26.7	6.8	5.1
	1800	2.7	3.9	1.9	1.4	0.9	0.8	0.8	1.6	1.4	3.9	4.9	23.4	17.7	22.5	5.9	6.3
	2100	2.1	4.4	1.7	2.7	1.3	2.4	1.3	3.4	1.4	5.4	6.8	26.1	12.8	18.7	4.4	5.2
	2400	1.4	2.6	2.9	4.0	3.0	4.2	1.5	3.0	1.8	2.8	4.7	26.6	14.2	16.7	6.2	4.5
	0300	1.6	4.5	3.5	9.3	7.4	21.5	12.0	10.3	3.0	4.4	2.6	7.7	4.2	4.4	0.9	2.8
	0600	1.1	3.5	3.6	12.0	13.2	28.7	11.2	7.4	1.6	2.5	1.7	6.0	2.7	2.5	0.9	1.4
	0900	1.2	3.6	3.7	18.1	13.7	26.4	10.2	6.0	1.6	2.2	1.9	5.6	2.3	2.0	0.7	1.3
AUTUMN	1200	1.7	5.5	8.5	22.8	12.5	12.5	3.6	4.4	2.0	3.3	2.8	6.4	3.9	6.3	1.5	2.1
	1500	1.9	7.0	7.4	14.2	9.1	8.2	3.8	2.2	0.8	1.5	2.3	7.4	9.4	14.7	6.1	4.0
	1800	8.1	12.3	6.1	8.4	4.3	5.4	2.4	1.5	0.6	1.7	2.3	8.8	7.5	12.3	7.4	11.0
	2100	6.0	17.4	6.4	8.7	3.8	7.4	2.8	3.2	1.5	3.2	5.2	13.7	6.0	7.0	1.7	5.8
	2400	2.0	6.1	4.3	8.8	4.5	13.5	10.7	9.0	2.7	6.4	3.5	11.0	5.7	4.6	2.4	4.6
	0300	1.6	4.0	4.1	8.2	9.0	29.1	19.3	13.8	4.1	2.3	0.4	1.6	0.5	0.9	0.3	0.8
	0600	0.7	3.7	4.0	14.5	14.0	36.8	16.2	6.6	1.3	0.7	0.1	0.3	0.2	0.1	0.2	0.6
	0900	0.8	4.3	5.8	19.3	16.9	35.3	11.0	4.1	0.6	0.4	0.1	0.3	0.2	0.2	0.3	0.5
WINTER	1200	1.3	5.6	10.4	26.2	19.7	18.4	3.9	2.0	1.0	1.8	0.6	2.3	1.8	2.7	1.2	1.1
	1500	2.9	6.1	7.0	13.0	10.3	11.3	5.2	3.2	1.0	0.9	0.6	2.7	6.6	15.4	8.9	4.9
	1800	16.4	11.3	3.6	4.6	2.1	4.6	2.3	1.5	0.3	0.3	0.2	1.7	4.3	11.5	12.5	22.8
	2100	12.1	26.7	6.6	3.8	1.8	6.2	4.4	2.9	1.5	5.8	5.7	7.8	2.7	4.1	1.9	6.1
	2400	1.3	4.2	2.4	1.7	3.2	14.3	17.3	23.4	8.1	6.8	2.9	4.2	2.2	3.7	1.8	2.4
	0300	7.8	10.0	3.4	5.1	3.4	5.5	2.5	2.7	1.4	3.4	2.9	10.8	7.9	15.5	6.4	11.1
	0600	5.9	13.5	6.4	12.1	6.4	10.2	4.3	4.3	1.4	2.4	1.4	7.5	5.9	8.3	3.1	7.0
	0900	6.2	12.9	9.3	13.6	5.3	10.2	4.1	5.2	2.2	2.5	2.1	6.6	3.9	7.0	3.8	5.2
SPRING	1200	2.7	6.8	5.1	8.5	4.3	5.4	1.8	2.5	1.3	2.9	1.8	8.4	12.5	22.9	8.0	5.2
	1500	4.9	4.1	1.7	1.8	1.1	1.9	0.4	1.3	0.5	0.8	1.0	5.5	13.4	32.3	15.9	13.3
	1800	13.3	8.7	0.9	0.5	0.3	0.7	0.6	1.0	0.4	1.6	1.6	10.8	15.0	22.6	8.4	13.6
	2100	4.7	7.7	1.4	1.8	0.7	1.6	0.7	2.0	1.6	5.3	6.1	26.5	14.8	15.8	4.6	4.9
	2400	3.5	2.9	1.7	2.0	1.3	2.2	1.9	1.5	1.3	2.7	5.2	18.1	15.5	22.4	8.6	9.3

TABLE 271(i)

EAST SALE MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	8.2	8.9	12.7	21.3	15.5	10.4	11.0	9.5	10.5	12.9	16.0	14.4	10.7	6.9	12.2	7.9
	0600	6.8	8.6	12.5	18.3	15.2	11.8	11.5	8.7	9.6	11.8	16.4	13.4	10.4	7.6	7.4	8.0
	0900	8.0	10.0	15.4	17.6	13.7	13.0	12.3	10.5	11.0	15.4	21.5	20.2	15.8	10.5	8.7	8.7
SUMMER	1200	7.8	8.9	16.2	20.2	16.8	14.6	13.5	11.9	14.7	18.6	24.5	24.3	24.6	19.4	13.8	14.7
	1500	14.6	10.3	22.7	23.3	20.5	18.0	16.9	18.7	17.2	23.5	30.8	30.4	25.1	24.7	22.4	19.3
	1800	11.6	12.6	18.3	21.0	18.4	15.4	14.3	17.6	17.9	22.4	28.4	26.7	23.4	20.1	12.6	13.5
	2100	11.0	8.9	14.1	16.3	13.1	9.7	8.5	10.6	10.2	13.6	18.7	18.5	16.3	14.9	10.2	9.8
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	7.3	8.3	16.7	16.4	16.9	11.1	12.5	12.0	12.0	13.9	15.3	15.6	12.3	10.8	7.6	9.6
	0600	8.9	8.3	13.2	20.6	20.9	12.0	15.1	10.5	9.6	12.8	15.6	15.2	11.9	9.8	9.3	9.7
	0900	8.9	9.9	15.3	17.3	15.9	15.4	14.4	11.1	12.5	16.3	19.2	17.2	13.4	11.6	10.5	8.3
AUTUMN	1200	10.2	9.3	12.1	15.9	15.5	14.7	12.5	12.9	13.9	16.7	23.7	23.0	21.2	21.5	11.5	8.0
	1500	10.0	7.9	14.8	16.8	16.8	15.5	15.3	15.5	13.7	20.5	23.7	26.2	23.6	24.0	15.9	10.7
	1800	8.3	9.5	11.4	14.4	13.5	11.0	12.3	12.2	13.1	16.4	19.8	20.9	18.1	18.2	16.5	9.6
	2100	6.0	9.3	11.8	15.3	11.5	9.1	9.8	9.2	8.6	12.1	17.1	17.8	14.9	12.5	15.8	11.0
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	7.3	7.7	10.9	11.7	17.1	17.2	20.9	10.8	13.2	12.2	16.7	17.1	14.1	12.8	10.2	9.6
	0600	7.7	6.9	12.2	13.7	19.2	14.6	16.9	19.6	14.8	12.7	17.1	16.3	13.9	13.0	13.0	10.4
	0900	9.0	9.3	11.3	13.4	17.6	15.4	18.7	19.3	21.6	12.7	17.8	17.1	14.3	14.7	16.2	9.5
WINTER	1200	12.5	9.3	13.3	13.8	16.4	19.0	17.7	17.8	16.1	17.0	22.6	23.3	21.3	24.8	16.6	12.0
	1500	12.4	10.3	12.9	13.0	13.4	13.7	13.6	15.3	16.7	17.7	21.9	24.9	26.1	26.9	20.3	13.8
	1800	11.5	8.6	11.4	9.9	10.5	9.4	13.8	9.4	11.9	12.7	15.9	18.5	18.4	18.9	16.4	11.3
	2100	7.8	8.3	10.5	11.9	10.5	16.1	13.2	19.3	10.7	12.4	14.3	16.0	16.2	15.2	14.7	8.9
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	6.4	8.7	11.9	14.5	13.1	13.7	11.6	9.3	10.6	15.5	16.9	17.6	12.7	10.6	12.1	8.4
	0600	10.9	9.2	14.2	16.9	10.4	14.5	12.8	10.5	10.9	12.6	17.6	16.1	12.5	9.7	11.0	10.0
	0900	12.4	9.0	13.8	15.0	12.9	15.9	14.7	11.4	12.8	14.6	22.8	23.3	18.6	15.4	13.8	10.2
SPRING	1200	11.0	8.6	13.5	16.5	14.6	14.6	13.7	15.3	16.1	20.0	25.4	27.0	26.0	26.6	17.9	14.7
	1500	11.7	11.8	17.0	18.6	16.9	15.8	15.2	17.0	16.9	22.4	28.7	29.3	30.5	29.1	24.7	17.7
	1800	13.5	10.9	13.9	14.9	13.5	11.4	12.1	13.5	17.1	18.5	23.5	24.2	21.7	19.5	20.4	15.1
	2100	9.0	9.0	10.9	12.3	12.4	10.3	8.8	10.3	11.6	11.5	16.6	18.4	18.0	13.7	12.6	10.5
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 271(ii)

EAST SALE PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	1.3	3.9	5.2	8.3	4.8	5.6	1.9	1.8	2.1	6.2	16.2	27.1	8.4	4.8	1.2	1.3
	0600	1.4	4.1	4.5	6.1	3.5	3.0	1.6	1.7	1.5	6.3	14.7	28.5	10.9	8.7	2.3	1.2
	0900	1.1	4.0	6.4	12.8	5.7	3.6	1.5	1.9	1.7	5.8	15.2	25.4	7.8	4.2	1.7	1.4
SUMMER	1200	0.6	1.6	4.1	17.0	12.5	6.9	3.1	2.9	2.3	7.3	15.6	14.8	4.8	4.4	1.4	0.8
	1500	0.3	0.6	2.8	19.9	19.0	15.2	5.2	3.3	2.0	5.3	11.8	8.7	2.3	2.5	0.6	0.5
	1800	0.1	1.0	4.4	22.9	19.5	15.4	4.9	3.2	2.0	5.8	10.0	7.4	1.0	1.4	0.5	0.5
	2100	1.2	2.9	6.1	20.2	15.0	10.7	4.1	4.4	2.7	7.9	9.1	10.4	2.6	1.2	0.7	0.8
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	0.8	2.0	2.0	3.8	2.2	2.1	1.5	1.4	1.0	4.8	12.2	35.1	14.9	10.8	3.2	2.4
	0600	0.6	1.6	1.6	2.7	1.3	1.8	1.0	1.8	0.8	4.3	12.2	33.6	16.1	14.9	3.2	2.5
	0900	0.8	2.7	2.4	3.8	1.8	1.2	1.5	1.7	0.9	3.9	12.1	36.5	15.4	10.9	2.6	1.6
AUTUMN	1200	0.9	2.3	3.5	10.7	5.1	3.5	2.2	2.4	1.8	6.2	14.9	25.4	10.2	8.1	1.6	1.3
	1500	0.3	1.0	3.3	17.6	10.0	7.0	3.7	3.1	2.2	6.0	14.6	17.1	5.9	5.5	1.5	1.1
	1800	0.6	1.5	3.8	18.6	12.7	10.8	3.5	3.1	2.2	6.1	12.7	13.8	4.3	4.3	1.3	0.7
	2100	1.3	3.4	3.8	10.2	6.3	6.1	3.4	3.1	2.1	5.4	11.8	23.8	9.0	6.5	1.9	1.8
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	1.6	1.4	1.4	3.1	1.2	1.1	1.0	0.7	0.5	1.2	10.1	33.0	19.0	17.8	4.4	2.4
	0600	1.2	1.6	1.3	1.8	1.3	1.2	0.9	1.0	0.2	2.3	8.6	32.9	22.0	17.6	4.0	2.0
	0900	1.7	1.9	1.5	1.8	1.3	1.2	0.6	0.9	0.1	2.0	7.9	33.7	22.7	17.7	3.0	2.0
WINTER	1200	1.3	2.1	2.8	4.6	1.6	1.8	1.0	1.3	0.8	2.8	13.4	33.5	15.8	13.1	2.6	1.5
	1500	0.6	1.4	2.4	11.5	5.4	3.5	1.9	2.0	1.0	4.3	14.4	27.1	10.0	11.3	2.2	0.9
	1800	0.9	1.8	2.3	10.0	6.2	5.2	1.6	2.5	1.2	4.9	11.5	25.1	11.2	10.5	3.6	1.7
	2100	1.5	3.5	2.6	5.1	2.6	2.2	1.3	1.4	0.7	3.6	10.0	28.2	15.7	13.5	4.7	3.3
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	0.9	3.3	3.6	4.3	1.2	2.3	1.3	1.5	1.1	3.6	13.2	33.1	13.2	11.5	3.2	2.7
	0600	1.2	2.9	1.9	3.4	1.7	2.1	1.4	1.5	0.8	3.9	13.4	32.0	14.9	13.0	3.8	2.1
	0900	1.2	2.8	4.6	7.4	2.7	2.5	1.3	1.8	1.2	4.2	14.5	30.5	11.9	9.0	2.3	2.0
SPRING	1200	0.9	1.8	3.9	11.5	7.1	5.2	1.7	2.2	1.6	6.2	16.2	23.7	7.9	7.0	1.7	1.3
	1500	0.5	0.4	2.1	15.3	13.1	10.1	3.5	2.9	1.9	5.3	14.8	17.8	5.1	5.2	1.1	0.8
	1800	0.5	1.2	4.1	18.8	11.7	10.5	4.1	3.2	1.7	5.6	13.9	15.6	3.3	4.4	1.0	0.5
	2100	2.6	4.9	7.0	12.0	6.2	5.3	2.0	3.1	1.3	5.1	11.9	22.4	7.4	5.7	1.7	1.4
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 27j(i)

KATHERINE MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0900	6.8	7.5	5.8	8.8	25.9	5.8	9.3	10.2	9.7	7.8	7.4	9.9	14.1	8.7	8.7	6.3
SUMMER	1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1500	6.0	12.6	7.6	11.6	0.0	10.2	10.2	11.4	8.2	8.6	9.9	9.5	17.4	9.6	15.2	9.8
	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0900	8.0	10.9	10.6	11.2	14.2	9.9	22.6	12.1	7.4	7.9	5.9	11.1	12.0	7.9	10.2	7.4
AUTUMN	1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1500	8.9	13.3	16.5	13.1	14.4	10.4	18.7	13.1	8.2	9.0	5.6	11.7	17.6	7.4	10.4	11.3
	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0900	8.7	10.4	7.2	12.6	11.5	11.9	11.8	17.6	5.1	10.6	3.7	9.3	16.7	7.9	14.2	7.8
WINTER	1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1500	9.8	11.9	16.2	11.9	17.4	11.4	6.8	14.0	13.7	11.4	11.1	9.5	0.0	9.6	5.1	7.4
	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0900	6.4	7.7	9.2	9.5	12.8	10.5	9.9	6.8	9.3	6.7	13.4	8.0	11.1	7.9	11.4	7.2
SPRING	1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1500	10.7	9.8	11.8	11.3	15.0	14.6	16.0	11.0	11.1	9.9	9.3	7.7	16.1	9.0	7.7	7.3
	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 27j(ii)

KATHERINE PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0900	3.9	6.6	3.9	3.9	0.4	3.5	0.4	7.0	1.8	4.4	1.3	20.6	4.4	22.8	4.4	10.5
SUMMER	1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1500	1.5	12.8	3.6	9.2	0.0	3.0	1.2	12.8	3.6	8.6	2.7	12.5	4.5	12.8	1.5	9.8
	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0900	5.1	14.2	9.2	26.4	4.7	9.8	1.7	8.5	1.7	4.1	1.7	4.4	2.0	2.7	0.7	3.1
AUTUMN	1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1500	5.9	12.5	7.4	26.6	6.1	10.4	1.8	12.3	1.4	4.1	0.6	2.7	1.2	3.5	1.6	1.8
	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0900	2.8	13.5	4.6	38.5	5.2	15.9	0.9	8.3	1.2	3.1	0.3	0.6	0.3	1.2	0.9	2.8
WINTER	1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1500	3.0	14.5	7.5	31.9	5.6	14.3	1.2	11.3	1.0	3.8	1.0	1.8	0.0	1.2	0.8	1.2
	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0900	2.7	8.5	5.5	13.7	3.0	7.0	0.9	6.4	0.6	2.4	1.5	8.2	3.4	22.3	4.0	9.8
SPRING	1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1500	5.1	12.8	6.2	24.7	4.5	8.3	1.9	12.6	1.1	3.6	0.2	4.7	1.5	5.3	1.3	6.2
	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 27k(i)

KIMBERLEY MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0900	7.1	8.3	7.0	8.4	10.5	6.6	7.3	6.1	4.6	5.7	7.2	6.8	10.2	8.3	7.1	5.6
SUMMER	1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0900	8.1	7.7	8.9	10.7	14.9	14.1	13.4	6.8	7.0	7.4	7.9	4.3	6.4	5.1	3.9	5.1
AUTUMN	1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0900	5.2	5.6	7.0	8.9	13.6	14.4	11.1	7.2	6.7	3.9	5.0	4.3	6.0	7.8	4.8	3.8
WINTER	1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0900	8.5	6.9	11.0	10.7	12.3	13.5	14.7	9.0	6.9	6.1	5.3	5.2	9.5	6.0	5.8	6.5
SPRING	1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 27k(ii)

KIMBERLEY PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0900	4.5	6.8	1.6	5.4	1.5	6.9	4.3	11.5	5.4	11.7	3.2	7.7	2.0	15.2	4.4	7.8
SUMMER	1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0900	2.2	4.5	4.2	11.2	14.8	20.1	7.4	13.4	6.1	6.0	1.0	1.5	0.7	3.1	1.1	2.6
AUTUMN	1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0900	1.6	3.1	2.0	7.2	12.9	25.8	14.9	15.7	5.7	5.0	0.6	1.2	0.4	1.2	0.5	2.4
WINTER	1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0900	4.2	8.4	4.1	12.9	6.8	11.5	4.4	7.4	2.1	5.2	0.7	5.7	1.5	9.7	6.3	9.0
SPRING	1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 271(i)

MELBOURNE MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	9.3	7.5	6.6	5.4	6.0	8.6	11.2	11.6	13 9	12.3	11 3	8.2	7.9	7.1	9.7	8.8
	0600	9.8	7.0	6.4	4.1	5.3	9.0	10.1	12.1	15.0	11.0	11 3	8.4	7.7	7.8	12.6	12.7
	0900	14.6	7.4	4.8	6.7	9.2	12.1	12.5	13.6	14.1	14.1	13.9	14.0	13.2	12.7	20 9	20.4
SUMMER	1200	18.2	10.1	6.1	12.6	10.8	13.5	14.0	15.6	16.5	15.8	16.9	17.9	15 9	20.4	23.3	22.6
	1500	17.3	12.6	7.7	11.8	13.7	15.6	17.6	18 7	20.5	19.4	22.7	18.8	19.4	20.2	21 7	20 5
	1800	15.3	12.7	10.3	12.4	14.1	15.6	17.6	18.6	20.0	18.0	18.1	21.2	18.0	15.5	17.4	16.7
	2100	9.1	9.2	7.5	7.8	10.0	11.3	13.0	14.1	15.9	13.3	14.8	11.9	12.9	11.0	13.6	11.6
	2400	9.5	8.5	7.1	5.5	7.9	8.8	10.7	11.7	13.8	12.3	11.6	9.0	7.2	9.0	10.2	11.3
	0300	8.7	7.3	6.7	5 9	5.5	8.0	9.8	13.4	12.7	10.8	11.8	9.6	9.7	9.8	14.9	12.6
	0600	9.0	8.2	4.9	5.8	6.3	7.9	11.1	13.6	14.8	12.2	12.6	9.7	9.4	10.6	14.2	12.4
	0900	11 4	8.1	8.5	7.4	9.3	12.1	12.2	13.7	15.6	13.0	13.1	12.7	12.3	14.3	17.7	16.5
AUTUMN	1200	17.4	9.1	5.6	7.0	10.3	12.1	13.6	12.9	14.7	15.3	16.3	15.7	18.6	16.7	21.7	20.8
	1500	18.2	11.0	7.4	7.5	10.2	12.0	13.8	14.6	16.6	16.0	18 4	17.5	18.4	19.0	20.8	19.2
	1800	13.0	10.4	4.2	6.5	9.5	10.3	12.9	13.9	14.9	15.4	13.9	13.4	13.8	13.7	15.2	14.9
	2100	10.7	7.4	5.9	6.1	7.5	8.8	10.3	12.4	13.3	12.2	12.5	10 4	11 1	9.6	15.4	13.3
	2400	10.0	8.1	6.6	5.4	5.9	8.4	10.7	11.7	12.7	10.3	11.1	10.2	8.8	9.9	14.3	12.3
	0300	9.4	8.0	7.0	7.4	8.3	8.6	13.6	8.3	14.7	11.1	11.9	9.7	10.7	12.6	17.9	15.6
	0600	10.2	8.3	7.1	6.9	8.2	8.6	13.1	13.0	14.3	12.7	11.9	10.2	11 1	13.8	17.2	15.8
	0900	11.2	8.3	8.4	7.1	6.7	9.1	12.0	16.7	16.2	13.2	12.3	11 9	12.6	14.7	19.9	17.0
WINTER	1200	16.9	8.0	7.2	11.6	9.8	11.9	12.9	11.9	15.4	14.1	17.4	17.3	17.0	18.8	23.5	21.9
	1500	18.7	12.7	8.7	11.1	11.6	11.4	11.4	11.3	13.4	14.4	17.5	18.1	16.2	20.2	23.3	20.8
	1800	13.9	9.3	7.2	7.4	9.0	8.8	7.7	9.6	11.4	11.3	12.7	12.8	13.8	14.6	18.1	16.5
	2100	11.7	7.0	6.4	7.9	7.0	8.1	9.3	9 5	13.5	12.3	11 4	10.7	11 1	12.7	18.1	15.3
	2400	10.9	8.0	7.1	8.6	8.5	8.7	8.9	12.3	14.4	11.8	10.2	10.4	10.9	12.4	18 3	15.3
	0300	10.6	8.1	7.2	6.7	7.5	9.4	10.0	14.6	14.3	12.7	11.7	10.5	9 0	10.0	16.6	14.1
	0600	10.4	7.4	5.6	5.9	7.9	8.9	10.5	15.6	13.3	11 9	11.2	10.6	10.8	10.2	16.0	14.8
	0900	14.3	9.6	5.6	7.0	13.4	11.6	13.0	15.2	15.0	15.3	16.1	16.1	14.6	16.7	20.6	20.9
SPRING	1200	21.8	14.7	7.2	9.9	17.1	13.6	14.1	14.8	15.8	16.6	20.4	19.0	19.7	21.0	24.1	24.5
	1500	20.6	14.1	11.3	10.8	14.2	13.6	15.8	16.3	17.1	18.3	21.4	21.5	21.5	21.4	23.4	23.1
	1800	15.4	11.4	8.4	12.7	12.9	12.0	13.9	16.3	15.9	16.7	19.8	17.7	14.2	16.1	17.8	17.8
	2100	11.7	8.3	5.5	6.0	8.5	9.4	10.0	13.4	13.9	13.6	14.9	12.8	13.4	12.1	15.1	14.2
	2400	10.0	8.2	8.2	5.7	7.4	8.3	10.0	13.5	15.0	11.7	12.1	11.9	8.8	9.8	12.7	13.6

TABLE 271(ii)

MELBOURNE PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	7.3	5.3	0.7	3.2	5.0	15.3	8.3	7.1	3.2	6.9	7.7	8.7	3.8	5.7	4 4	7.3
	0600	8.9	9.1	0.9	2.5	4.1	13.4	7.1	5.0	2.9	5.3	8.5	8.9	3.7	4.4	5 4	9.9
	0900	6.8	5.5	1.7	2.3	3.9	10.4	9.0	9.7	6.4	9.5	7.6	5.6	1.9	4.2	5.1	10.5
SUMMER	1200	3.8	2.3	0.9	0.9	1.4	7.3	11.7	25.6	11.2	6.7	3.7	3.6	1.9	3.8	6.4	9.0
	1500	2.5	1.3	0.3	0.8	1.2	8.1	16.2	33.6	11.6	4.9	2.5	2.2	1.3	3.7	4.3	5.5
	1800	2.3	1.0	0.8	2.0	3.6	11.5	17.9	31.8	10.2	5 8	2.3	1.5	1.1	2.3	2.3	3.6
	2100	2.2	2.8	1.0	4.3	6.6	21.1	17.7	17.5	6.6	6.5	4.4	2.7	1.0	0.9	1.6	3.0
	2400	4.0	3.7	0.7	2.5	7.0	18.0	13.2	9.6	5.0	5.6	8.6	8.7	2.8	4.6	2.6	3.4
	0300	12.0	9.0	1 0	2.4	2.9	6.2	4.8	3.1	1.7	4.1	7.1	10.0	5.0	8.9	8.9	12.7
	0600	15.1	12.3	1 1	1.9	2.6	6.3	3.9	2.1	1.4	3.5	7.5	8.2	3.7	8.2	9.9	12.5
	0900	11.3	10.8	1.3	1.8	2.4	6.2	4.2	3.3	2.2	5.3	7.4	7.5	4.3	8.7	11.2	12.1
AUTUMN	1200	5.1	3.5	1.0	1.5	1.9	6.2	6.9	11.5	6.4	8.8	6.2	5.4	4.2	7.9	12.2	11.4
	1500	4.2	1.8	0.8	1.2	1.8	6.5	10.5	19.4	9.0	7.4	3.6	4.7	3.7	6.9	9.9	8.6
	1800	4.4	2.7	0.6	1.9	3.3	11.6	13.2	14.8	6.0	6.4	5.2	3.2	3.0	5.5	8.8	9.4
	2100	6.6	4.1	1.3	3.5	6.2	14.3	7.6	7.5	4.1	4.9	5.8	6.9	4.3	5.4	7.9	9.7
	2400	9.3	6.1	1.2	3.1	3.3	9.6	5.3	3.3	1.8	5.8	7.7	9.1	5.5	9.1	8.0	11.9
	0300	14.0	9.4	1.1	1.7	1.2	2.3	1.6	1.3	0.9	3.1	4.8	9.0	6.5	11.3	15.0	17.0
	0600	15.4	11.3	1.8	1.3	0.5	2.2	1.4	1.3	0.7	2.8	5.1	7.8	5.4	10.5	15.3	17.2
	0900	13.3	9.5	1.7	1.5	0.9	1.8	2.3	1.1	0.9	3.1	5.1	8.9	5.2	10.9	16.3	17.5
WINTER	1200	6.8	4.2	1 2	1.1	1.1	2.6	3.0	4.8	3.1	6.9	8.8	9.3	4.8	10.8	18.5	13.1
	1500	4.3	2.7	0.7	1.0	1.3	3.7	5.6	8.1	7.0	8.1	7.5	6.5	4.9	9.3	16.2	13.0
	1800	6.4	3.5	0.9	1.4	2.6	5.1	6.0	6.0	4.5	6.3	6.8	6.8	4.7	9.2	15.7	14.1
	2100	10.2	5.7	1.2	1.7	2.7	4.4	3.0	2.5	1.5	4.2	6.1	7.9	6.5	10.4	16.5	15.4
	2400	10.6	7.8	1.3	1.0	1.4	3.1	1.7	1.2	1.0	3.4	5.5	9.9	6.0	12.7	15.8	17.6
	0300	9.5	7.2	1 3	1.3	2.2	4.9	4.1	4.4	3.0	7.3	9.0	11 8	5.7	8.3	9.0	11.0
	0600	12.5	8.7	1.0	2.0	2.3	5.1	3.3	3.7	2.7	6.3	9.0	9.6	5.6	7.5	9.2	11.5
	0900	7.5	5.6	0.7	1.8	1.6	5.7	4.5	5.7	5.2	11.1	8.1	9.2	4.1	7.1	10.5	11.6
SPRING	1200	3.6	1.8	0.5	0.5	1.0	4.4	7.2	17.7	8.8	8.8	6.7	7.3	3.1	7.3	12.1	9.1
	1500	2.5	1.2	0.5	0.6	1.3	4.7	11.5	22.3	9.4	8.4	5.6	4.9	3.1	7.0	9.9	7.2
	1800	4.4	2.2	0.7	1.1	2.3	8.7	13.6	18.7	7.5	8.4	6.6	4.2	3.1	5.0	7.1	6.4
	2100	6.5	4.3	1.7	3.5	5.0	11.6	9.8	9.8	6.3	7.1	6.4	7.2	2.9	5.1	6.1	6.7
	2400	8.0	5.2	0.7	2.6	2.4	7.9	5.4	6.5	3.1	7.1	8.8	10.0	5.7	8.6	7.9	10.1

TABLE 27m(i)

ONSLOW MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	15.9	16.5	15.7	15.2	14.8	12.1	12.3	16.4	17.2	15.9	12.8	11.7	10.6	12.9	14.9	13.5
	0600	12.0	14.3	14.0	12.4	12.8	10.4	11.3	15.0	15.6	13.9	11.3	10.9	11.1	11.4	15.5	11.6
	0900	16.1	17.8	19.2	18.5	16.8	17.8	17.9	19.6	18.2	15.7	13.9	13.9	11.9	12.5	15.9	11.8
SUMMER	1200	22.2	24.1	28.2	26.0	23.1	19.0	18.8	18.1	18.9	17.9	17.2	23.9	20.7	16.8	17.4	18.9
	1500	30.0	37.9	32.1	44.2	24.1	25.1	24.9	23.3	21.3	22.8	30.4	30.7	26.3	23.6	23.3	25.4
	1800	31.0	38.9	27.8	25.3	31.7	29.1	24.9	25.3	26.8	32.3	28.7	25.8	23.3	19.7	21.6	21.9
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	15.3	18.0	18.5	18.1	17.1	15.3	13.9	18.3	20.2	18.7	14.8	12.1	12.3	12.1	18.7	19.3
	0300	12.0	14.1	12.7	12.8	10.8	10.2	11.3	12.8	13.9	12.0	11.2	11.3	8.1	8.3	15.7	14.3
	0600	12.0	14.3	13.4	10.8	8.3	9.1	11.6	12.0	13.6	12.5	10.2	9.4	11.3	10.6	16.8	13.3
	0900	16.1	16.9	17.2	14.6	13.8	15.8	17.6	17.6	15.6	13.4	13.9	10.3	10.3	12.7	19.8	16.0
AUTUMN	1200	17.6	18.9	20.2	17.1	16.0	15.6	18.9	17.3	15.0	13.9	13.7	15.5	15.3	12.8	14.2	15.2
	1500	21.6	22.0	34.5	23.7	21.8	20.2	18.2	19.2	17.7	17.4	18.5	23.2	19.9	17.5	18.3	19.7
	1800	16.1	23.0	33.4	18.3	22.6	24.7	19.1	17.3	14.4	18.1	17.3	15.5	15.0	12.1	11.7	12.6
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	13.1	15.5	14.1	15.9	12.5	12.0	12.3	13.9	14.2	13.2	11.8	12.0	10.7	10.8	13.4	15.1
	0300	12.5	12.7	10.7	9.3	7.3	8.9	10.7	12.3	12.7	12.2	10.9	8.3	10.7	11.5	13.4	10.6
	0600	11.3	12.6	11.4	9.6	8.3	8.9	11.2	12.2	12.9	10.1	11.0	8.2	10.7	22.5	16.7	12.1
	0900	13.2	17.9	16.4	13.7	13.2	15.6	17.8	17.7	12.5	12.2	13.2	13.0	13.2	13.7	18.4	11.4
WINTER	1200	18.0	20.5	18.1	15.4	14.4	19.9	19.4	18.0	17.3	16.3	13.3	15.0	13.6	11.0	11.5	14.8
	1500	19.1	20.9	15.2	13.7	16.9	19.6	19.9	19.0	18.4	19.1	19.4	19.5	16.4	13.7	14.9	17.4
	1800	13.1	14.0	13.5	10.9	13.4	16.7	17.2	15.5	14.9	13.0	14.0	11.6	9.2	8.1	8.1	10.7
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	11.4	9.8	12.5	8.4	9.0	10.6	11.1	12.2	12.5	12.5	11.3	9.1	6.8	8.9	9.0	8.5
	0300	11.1	4.4	9.4	9.3	9.2	12.1	11.2	17.6	17.8	15.8	12.9	10.8	11.6	8.4	6.4	8.7
	0600	13.7	10.4	9.4	9.1	7.9	9.9	11.8	16.2	16.3	14.4	11.6	10.5	8.6	8.7	9.7	6.9
	0900	14.6	18.2	20.1	18.2	19.2	21.6	23.7	21.8	20.3	16.0	12.5	13.9	11.8	11.6	12.9	13.8
SPRING	1200	19.2	18.1	15.2	13.1	15.8	17.8	20.6	20.0	18.5	18.4	18.8	23.0	20.9	16.6	16.8	19.4
	1500	24.6	20.8	27.8	12.8	17.5	20.3	22.1	21.3	21.8	22.8	27.5	29.6	25.9	21.7	23.1	25.5
	1800	17.6	25.9	12.9	13.6	14.8	25.0	24.6	22.4	21.4	28.4	23.9	22.9	19.4	16.3	17.0	17.4
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	29.6	10.5	7.4	19.1	7.1	12.0	17.5	18.0	18.6	18.2	14.6	11.7	10.8	10.8	9.1	11.8

TABLE 27m(ii)

ONSLOW PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	1.2	1.5	1.1	1.8	1.0	2.5	2.1	11.2	19.3	27.6	12.6	9.1	2.8	2.1	2.1	2.0
	0600	1.0	1.9	2.4	3.5	1.9	3.7	3.0	16.3	23.2	24.8	7.8	4.4	1.3	1.5	1.6	1.9
	0900	3.3	4.9	4.2	5.7	3.3	7.2	9.5	23.5	12.5	8.8	2.9	4.1	2.8	2.8	1.8	2.9
SUMMER	1200	5.1	2.4	1.1	1.8	1.3	3.4	4.8	8.8	5.2	3.9	1.3	14.0	16.1	13.5	6.3	10.9
	1500	1.4	0.9	0.4	0.5	0.2	1.0	1.1	2.8	2.5	1.8	1.8	33.1	25.7	15.0	6.7	5.2
	1800	1.4	1.0	0.7	0.4	0.5	0.4	0.6	2.5	1.9	5.3	9.4	39.6	19.8	10.3	3.8	2.5
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	1.9	1.5	1.1	1.1	0.6	1.5	1.0	5.9	14.0	33.0	15.5	11.4	3.9	3.5	1.7	2.4
	0300	0.9	1.8	2.9	3.9	3.0	7.5	7.1	21.6	19.2	18.3	6.2	3.6	0.6	1.1	1.0	1.4
	0600	0.4	2.4	4.4	8.9	5.8	11.1	8.5	22.6	17.1	11.6	2.7	1.6	0.7	0.6	0.5	1.2
	0900	1.2	5.0	9.7	14.2	8.1	15.5	12.7	20.4	5.5	3.2	0.9	0.7	0.6	0.7	0.8	1.1
AUTUMN	1200	12.7	10.4	4.7	4.6	3.4	7.0	6.8	9.9	3.4	3.0	1.3	4.3	5.4	5.7	3.4	14.0
	1500	4.8	1.8	0.8	1.0	1.0	2.5	2.5	5.2	3.5	2.7	1.5	17.4	14.0	18.0	10.6	12.7
	1800	2.9	1.6	0.8	0.8	0.5	2.1	2.2	5.3	2.9	4.2	9.4	29.8	12.4	11.8	6.5	6.8
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	0.9	2.4	2.1	1.9	1.2	5.3	5.6	14.5	18.3	25.3	9.3	6.7	1.1	2.1	1.5	1.7
	0300	1.4	2.0	3.5	6.8	5.2	13.0	13.3	27.9	14.4	8.6	1.0	0.9	0.3	0.7	0.5	0.6
	0600	0.6	3.6	6.1	11.0	8.2	15.8	14.6	25.8	8.3	3.6	0.5	0.3	0.3	0.3	0.4	0.6
	0900	1.5	5.6	12.9	15.4	10.3	23.7	13.2	12.1	2.2	0.9	0.4	0.3	0.2	0.2	0.4	0.6
WINTER	1200	16.7	14.8	6.3	6.7	5.0	11.1	8.5	9.8	3.1	1.8	1.2	1.8	1.5	2.3	1.4	8.1
	1500	9.3	3.2	0.7	1.1	1.3	4.9	5.6	8.1	3.2	2.6	1.0	8.4	8.9	12.1	12.0	17.8
	1800	5.0	1.5	0.4	0.4	0.2	3.0	5.9	10.3	3.5	3.6	8.0	18.4	9.5	10.3	8.0	12.0
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	1.8	3.2	1.3	3.3	2.2	8.2	10.0	26.6	17.3	15.0	4.0	2.5	0.5	0.8	1.2	2.3
	0300	0.1	0.4	0.8	0.9	0.6	3.0	3.9	19.9	29.3	28.7	7.0	2.7	0.8	0.8	0.6	0.5
	0600	0.2	0.5	1.1	3.1	2.1	4.5	5.5	27.7	29.6	19.0	3.7	1.2	0.4	0.7	0.3	0.3
	0900	1.5	3.1	4.2	5.4	5.0	14.0	17.4	26.1	10.2	6.6	1.5	1.3	1.1	1.1	0.6	1.0
SPRING	1200	5.4	1.7	0.7	0.8	2.0	5.8	8.2	12.9	7.6	6.6	1.7	11.5	11.5	9.5	4.1	9.9
	1500	0.9	0.2	0.0	0.3	0.3	1.5	2.3	5.7	4.0	4.2	3.4	34.3	20.5	11.5	5.8	5.2
	1800	0.3	0.1	0.1	0.0	0.1	0.8	2.3	6.3	4.2	7.5	14.3	36.0	15.2	8.8	2.6	1.7
	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2400	0.1	0.4	0.1	0.2	0.3	1.1	1.8	12.3	23.4	39.4	10.8	5.6	1.9	1.4	0.5	0.7

TABLE 27n(i)

PERTH MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	11.0	10.4	15.4	16.2	18.0	13.4	12.6	13.2	13.6	14.4	10.4	11.0	12.2	9.6	12.0	6.7
	0600	7.4	12.1	15.3	16.4	15.9	10.5	12.1	12.0	15.0	12.5	12.6	11.3	11.4	10.7	9.4	7.3
	0900	16.8	18.3	19.4	19.1	16.4	12.4	12.9	13.4	13.4	14.9	12.9	15.1	14.7	14.4	11.7	12.3
SUMMER	1200	14.8	15.1	17.5	16.9	15.6	12.9	11.1	12.8	18.2	19.3	17.6	17.8	19.5	19.9	17.0	12.3
	1500	14.8	15.5	15.0	17.8	17.3	16.2	15.3	19.9	23.1	23.5	20.9	20.1	21.3	25.1	0.0	13.5
	1800	16.9	11.5	21.2	18.4	20.2	19.9	17.5	21.3	21.8	20.8	15.7	16.5	16.2	14.8	17.6	14.6
	2100	6.3	7.1	10.5	14.7	15.6	15.9	12.4	14.4	14.9	13.7	10.2	9.2	10.1	11.3	5.6	5.7
	2400	6.5	9.6	14.5	18.2	20.6	14.9	13.6	14.2	13.7	12.1	9.8	10.3	12.1	11.6	9.6	7.3
	0300	9.9	10.4	14.3	14.9	15.4	11.2	9.9	11.7	11.2	14.8	17.4	16.6	18.9	13.0	11.1	9.7
	0600	10.3	10.1	14.4	15.0	14.3	10.1	9.8	11.0	13.0	16.9	15.0	17.5	20.0	15.3	11.4	9.8
	0900	9.8	13.4	15.6	17.0	14.0	10.0	11.3	11.9	14.0	14.1	20.3	18.6	24.2	15.3	14.3	10.3
AUTUMN	1200	14.7	15.4	16.4	16.0	15.4	10.5	9.8	12.4	13.1	15.2	17.1	18.4	18.8	17.9	15.3	12.8
	1500	15.4	13.7	16.4	15.8	14.8	13.1	9.6	12.9	17.4	18.5	17.1	17.6	19.1	20.4	20.8	15.6
	1800	8.7	12.3	13.5	13.4	14.6	14.0	12.1	13.2	15.7	14.9	13.0	13.7	14.4	15.7	19.1	9.7
	2100	10.0	8.4	10.7	10.2	11.7	11.0	10.6	10.8	11.6	9.7	13.0	13.0	14.2	13.5	14.2	12.9
	2400	10.7	9.5	12.6	15.5	15.8	11.3	10.2	11.3	10.9	15.2	16.6	15.0	16.9	14.6	12.3	8.4
	0300	11.2	9.8	11.0	10.7	8.8	7.6	10.8	10.7	14.3	18.2	19.9	20.8	23.8	18.6	13.1	11.5
	0600	10.9	10.3	11.7	10.7	9.2	7.1	9.5	10.0	13.8	19.9	18.7	20.6	24.0	17.4	13.7	10.8
	0900	11.2	10.7	11.8	11.7	7.9	7.6	10.7	13.0	16.7	19.7	21.7	21.8	23.7	19.6	14.5	11.5
WINTER	1200	15.9	14.3	14.6	13.0	10.7	8.6	12.9	12.6	15.8	18.7	22.0	22.7	24.6	21.0	17.2	16.9
	1500	14.7	13.7	14.0	14.3	12.5	8.7	9.4	12.7	14.1	15.8	18.6	19.4	22.5	20.6	20.3	17.0
	1800	12.6	9.8	10.6	11.4	11.2	9.4	8.7	10.9	11.9	11.5	15.6	16.7	18.8	16.8	15.8	11.2
	2100	11.1	9.0	8.2	9.6	6.8	7.0	9.1	10.2	12.2	16.0	15.7	15.1	19.2	14.4	13.7	11.6
	2400	10.2	9.0	10.4	9.5	8.5	8.3	8.8	10.2	13.2	17.6	20.2	17.5	21.4	18.8	12.7	11.0
	0300	8.3	8.7	13.7	14.2	15.6	9.3	9.8	11.4	13.3	14.6	16.2	16.0	16.9	12.5	10.2	9.0
	0600	8.9	9.3	14.3	14.4	14.1	8.8	10.0	11.4	13.8	15.9	17.6	15.3	16.1	13.7	11.2	7.7
	0900	12.2	15.5	15.6	16.2	13.4	9.6	12.3	13.7	13.9	19.8	19.0	19.4	20.5	17.1	13.4	12.7
SPRING	1200	14.3	14.6	16.2	16.5	13.9	11.8	10.2	13.8	16.5	18.6	18.6	19.2	21.7	21.6	18.3	15.9
	1500	13.0	13.6	18.7	16.8	18.7	14.2	15.5	18.9	22.0	21.2	19.5	19.8	22.5	24.7	22.4	17.8
	1800	7.2	11.2	11.4	15.6	18.0	16.3	14.6	18.0	18.3	17.4	15.9	15.1	18.7	19.3	13.7	8.7
	2100	5.6	7.1	9.8	13.3	13.9	13.3	11.9	12.1	14.3	12.8	12.6	13.3	13.6	17.1	9.4	7.3
	2400	9.9	8.1	15.1	14.7	16.2	10.2	10.8	12.1	12.3	14.3	15.2	15.2	17.9	13.4	11.7	7.5

TABLE 27n(ii)

PERTH PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	0.8	1.9	6.1	18.8	14.2	10.2	12.7	17.6	6.8	4.0	2.0	1.8	1.2	1.1	0.6	0.5
	0600	1.4	4.5	11.2	19.0	12.9	10.1	12.3	14.2	3.8	3.8	1.4	1.8	1.4	1.1	0.6	0.7
	0900	1.9	7.0	12.4	19.3	8.6	12.1	8.5	10.1	4.5	5.9	2.3	2.4	1.6	1.6	0.7	1.2
SUMMER	1200	1.4	4.3	5.9	11.1	7.7	8.9	3.9	6.4	7.7	23.1	8.4	5.0	2.7	2.0	0.5	1.0
	1500	0.2	1.0	1.5	4.7	4.6	6.0	2.4	4.3	13.9	40.6	11.6	5.6	2.5	0.8	0.0	0.2
	1800	0.3	0.3	0.6	3.3	4.5	3.5	1.0	9.1	25.9	39.7	5.4	3.4	1.3	1.2	0.1	0.3
	2100	0.6	0.6	0.5	3.7	4.9	6.0	6.5	25.2	27.4	16.6	1.5	2.4	1.3	1.5	0.1	1.2
	2400	0.7	1.3	2.3	10.2	12.8	9.6	10.9	26.6	11.1	6.3	1.8	2.6	1.5	0.9	0.5	0.8
	0300	5.1	8.1	11.7	13.8	9.6	9.2	8.7	9.6	3.5	2.4	2.5	3.8	2.9	2.1	2.3	4.7
	0600	6.2	11.3	14.1	14.4	8.8	8.4	7.6	7.8	2.4	2.7	2.1	3.8	2.2	1.9	1.9	4.4
	0900	5.8	13.9	14.3	16.9	7.0	10.1	5.1	5.4	1.5	3.0	2.0	3.5	1.8	2.6	2.0	5.2
AUTUMN	1200	4.0	8.8	8.1	11.5	6.2	8.0	4.6	6.8	4.4	9.1	4.8	6.4	4.5	5.9	3.1	3.9
	1500	1.9	3.1	3.8	6.9	6.0	6.5	2.9	5.4	8.7	22.5	10.0	8.9	5.4	5.1	1.9	1.1
	1800	0.9	1.3	2.2	6.9	7.1	5.4	2.6	7.7	19.0	24.6	6.0	6.6	3.1	4.0	1.6	0.7
	2100	1.9	2.9	3.4	7.4	5.2	10.6	8.8	24.8	10.1	6.6	2.9	6.3	2.4	2.2	1.9	2.8
	2400	3.7	5.4	6.7	11.5	8.1	10.7	11.1	16.6	5.3	2.9	2.6	4.5	3.0	2.1	2.2	3.4
	0300	10.5	14.7	8.7	7.6	3.1	5.8	3.1	3.7	1.8	3.3	5.3	8.8	5.2	3.6	4.7	10.3
	0600	12.0	17.3	8.8	7.8	3.1	4.7	2.8	3.3	1.5	2.9	4.6	8.8	4.8	3.7	4.1	9.7
	0900	12.0	18.7	10.2	7.5	2.6	4.3	2.1	2.7	1.1	3.4	4.3	8.2	4.2	3.2	4.5	10.9
WINTER	1200	7.9	10.8	6.9	6.5	2.2	5.1	2.6	5.0	2.4	5.5	5.1	9.9	6.0	8.3	6.3	9.6
	1500	3.9	5.8	5.1	5.3	1.8	3.5	2.1	5.8	5.4	10.7	7.5	13.4	8.7	11.5	4.7	4.8
	1800	3.0	4.5	4.1	8.6	2.9	2.1	2.2	8.4	7.6	12.4	6.7	12.3	7.4	8.4	4.6	4.7
	2100	3.6	6.7	7.5	6.2	3.2	5.4	4.4	8.8	2.6	4.3	5.3	16.3	7.7	5.3	4.0	8.4
	2400	8.6	11.6	7.4	7.2	3.0	6.5	5.1	5.4	1.4	3.0	4.3	11.2	5.4	3.4	4.9	11.5
	0300	3.6	6.1	5.3	11.2	8.0	10.0	10.9	14.9	4.2	4.7	4.3	6.8	3.2	2.6	1.9	2.4
	0600	5.4	9.6	10.0	12.7	7.1	9.1	9.0	11.0	2.7	4.5	3.2	6.5	2.6	1.9	1.4	3.4
	0900	3.6	8.5	9.8	12.6	6.0	9.9	7.1	8.6	3.9	6.5	4.3	6.0	3.6	4.1	2.2	3.5
SPRING	1200	1.8	4.1	3.6	6.7	4.2	5.8	4.2	7.8	7.7	19.0	8.9	10.6	5.9	6.6	1.7	1.4
	1500	0.5	1.5	1.5	3.4	2.4	3.0	1.4	3.6	11.2	33.9	13.5	11.7	6.6	5.1	0.5	0.4
	1800	0.3	0.9	0.7	2.8	2.8	2.2	1.3	7.9	24.8	29.5	7.2	9.1	5.4	3.7	0.6	0.9
	2100	2.0	1.7	1.2	3.5	3.5	5.2	5.2	29.0	17.1	9.7	2.7	9.7	4.5	2.1	1.5	1.5
	2400	1.6	2.5	2.4	7.1	5.5	9.3	10.9	26.0	7.3	5.5	3.8	7.6	4.2	3.1	1.3	2.0

TABLE 27o(i)

RICHMOND MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	5.1	6.7	7.4	3.7	3.7	9.6	9.9	8.2	8 9	8.2	8.4	6.8	5.6	7.9	5.6	8.4
	0600	10.7	6.6	10.0	10.2	6.4	9.7	11.7	10.5	10 1	8.6	6.4	10.5	6.6	11.1	9.3	10.8
	0900	8.7	7.4	7.5	6.2	8.2	10.3	12.9	14.0	12.4	10.0	15.1	15.6	16.2	14.4	12.2	10.4
SUMMER	1200	10.7	9.5	9.2	8.9	12.5	13.6	14.7	14.4	14.6	13.5	19.2	22.2	19.2	20.2	15.3	10.7
	1500	11.3	11.4	13.2	13.7	15.1	17.5	17.1	15.9	12.3	14.9	22.9	24.5	24.7	20.2	19.4	12.9
	1800	13.3	12.9	16.6	15.3	14.9	16.4	17.6	13.8	14.3	15.8	20.3	22.5	17.8	14.4	16.8	13.6
	2100	8.1	7.8	7.4	7.8	8.6	9.8	9.5	11.3	11.2	8.4	14.1	12.6	12.4	13.3	7.9	11 5
	2400	4.3	5.8	5.2	9.0	5.9	8.1	7.3	9.8	8.5	6.6	6.8	8.9	13.0	6.8	6.3	7.4
	0300	6.0	6.5	5.0	0.0	3.7	8.3	7.8	9.4	8.2	6.9	8.2	7.3	12.1	8.5	6.5	6.3
	0600	11.6	7.7	8.2	7.0	6.8	10.4	10.2	11.2	12.7	9.4	11.5	11.3	12.9	12.5	11.4	10.8
	0900	10.9	7.4	5.9	4.9	10.7	8.3	11.8	12.0	14.7	12.0	14.2	15.3	15.4	14.6	15.3	10.8
AUTUMN	1200	9.2	8.7	7.8	7.6	10.3	12.6	13.1	14.2	15.8	16.4	19.1	22.3	24.3	19.3	16.8	12.1
	1500	9.2	9.3	9.5	9.1	12.9	15.5	15.6	14.9	15.0	17.6	22.4	21.6	23.2	20.3	15.2	10.2
	1800	8.3	9.2	11.2	9.3	10.5	11.8	12.6	12.5	11.7	12.1	12.1	14.2	15.1	10.2	15.3	9.1
	2100	9.7	6.9	6.0	5.6	8.2	10.6	10.5	9.9	9.7	8.3	8.8	11.7	10.5	8.7	9.8	7.5
	2400	10.2	6.5	6.2	9.3	1.9	2.8	6.5	8.0	9.5	5.8	6.8	12.4	12.1	6.9	7.4	7.6
	0300	8.2	10.3	7.4	5.1	3.7	17.6	11.1	10.8	11.1	10.2	13.7	12.6	14.0	13.3	9.5	9.1
	0600	10.1	11.4	7.3	5.8	11.8	8.8	17.3	14.6	15.0	12.3	12.4	16.7	15.1	12.3	11.1	10.3
	0900	12.1	7.8	7.2	5.4	3.9	6.7	14.2	18.6	17.2	15.9	17.7	20.4	19.3	15.0	14.2	12.7
WINTER	1200	12.5	8.7	7.0	6.8	8.5	9.9	13.8	16.5	17.9	17.2	23.2	24.8	27.1	22.4	18.4	14.8
	1500	9.7	9.7	8.7	7.7	8.5	12.3	12.4	14.4	16.3	16.5	23.6	25.0	25.3	22.9	19.6	13.0
	1800	14.1	7.9	6.9	7.1	8.2	8.1	10.2	11.4	12.5	10.9	13.8	14.7	14.8	14.6	10.5	9.5
	2100	8 9	7.8	7.1	8.1	12.1	10.2	18.3	10.4	12.1	9.9	10.5	10.4	10.4	10.7	9.8	9.5
	2400	8.4	8.6	7.1	14.8	0.0	4.3	13.9	7.8	10.6	10.0	8.0	12.8	10.8	12.9	12.4	10.2
	0300	12.4	10.2	7.8	6.5	5.6	6.5	9.3	8.3	9.6	9.6	12.6	11.3	11.9	8.7	15.0	11 0
	0600	10.7	8.8	7.4	6.1	6.2	11.1	10.7	9.4	11.6	9.8	10.4	12.6	13.5	11.2	12.3	13.4
	0900	11.1	7.5	6.2	6.3	6.2	9.7	13.5	14.1	15.8	14.1	20.7	22.3	21.9	17.6	16.1	14.1
SPRING	1200	12.9	9.8	9.1	8.7	10.6	12.9	14.4	15.0	15.9	17.7	22.7	29.3	27.6	28.2	22.5	13.7
	1500	12.5	11.7	12.3	13.9	15.0	16.5	17.5	16.9	17.4	19.7	27.2	27.7	28.6	25.0	21.0	17.3
	1800	11.6	10.9	12.4	13.5	13.3	14.9	15.5	15.1	14.3	15.3	20.2	19.2	18.8	16.2	14.0	13.7
	2100	9.9	9.6	6.9	6.0	10.9	9.4	10.4	9.7	10.0	10.3	11.4	13.3	11.5	10.9	9.4	10.5
	2400	11.3	8.2	6.6	3.7	10.5	6.0	8.0	6.3	9.5	7.6	6.5	15.6	11.4	8.5	11 1	11.1

TABLE 27o(ii)

RICHMOND PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	1.7	4.8	1.7	1.7	0.4	2.6	4.8	21.7	23.5	18.7	4.8	3.9	0.4	3.0	2.6	3.5
	0600	2.8	5.5	1 6	1.6	2.0	6.3	7.1	19.7	18.3	18.3	5.3	5.0	1.4	1.3	1.1	2.7
	0900	6.0	12.5	7.0	4.2	3.4	7.9	7.7	16.3	10.6	8.3	2.0	3.0	1.0	3.0	1.8	5.4
SUMMER	1200	6.4	14.8	9.1	10.1	5.1	14.5	7.8	6.7	4.1	3.1	2.0	2.7	2.0	3.6	2.0	5.9
	1500	4.0	11.0	9.9	13.9	9.0	17.1	8.1	5.2	2.2	3.5	3.1	4.3	1.7	2.8	1.1	3.1
	1800	1.5	7.9	14.1	21.9	12.1	14.1	6.5	5.3	1.5	2.7	2.3	3.6	1.7	1 5	1.1	2.2
	2100	3.1	7.3	12.6	14.2	7.0	12.7	10.1	11.4	6.3	5.4	2.0	3.2	1.3	1.2	0.4	1.7
	2400	1.3	3.5	6.6	2.6	2.6	4.8	7.5	16.3	17.2	21.6	4.0	4.0	1.8	1.3	2.2	2.6
	0300	4.4	3.9	1.5	0.0	0.5	2.9	2.4	12.7	23.4	21.0	4.4	6.3	2.0	6.8	1.0	6.8
	0600	3.9	5.8	0.9	1.7	0.6	1.5	2.8	9.7	24.0	18.2	7.5	6.0	3.0	5.6	4.3	4.5
	0900	3.8	5.5	3.6	4.2	1.2	4.4	5.0	14.0	20.2	12.9	3.9	4.6	2.7	3.6	3.7	6.8
AUTUMN	1200	6.1	10.6	6.6	6.3	4.3	7.8	7.4	12.7	8.4	5.7	3.9	5.3	2.8	2.8	3.4	6.0
	1500	4.3	12.8	7.9	9.0	6.5	14.5	7.4	7.2	4.1	3.4	3.8	6.0	3.4	3.4	2.3	4.1
	1800	1.3	5.2	12.6	13.8	8.4	13.3	7.5	7.9	3.6	4.4	4.4	7.0	3.4	2.9	1.8	2.4
	2100	1.7	4.7	6.0	2.1	1.3	4.5	4.0	14.5	14.0	14.3	7.9	9.4	3.2	5.7	3.0	3.6
	2400	1.3	5.2	1.9	0.6	0.6	2.6	1.3	11.0	19.4	22.6	3.9	10.3	1.3	6.5	3.9	7.7
	0300	5.1	7.4	2.9	1.5	0.4	0.7	0.4	5.5	12.5	13.2	4.4	10.3	5.9	11.8	7.0	11.0
	0600	5.4	4.7	3.3	2.3	0.4	1.6	0.8	7.1	10.7	15.1	6.5	10.9	7.2	8.5	6.6	8.9
	0900	5.4	7.1	3.3	2.0	1.0	1.9	0.9	6.7	14.4	12.3	5.3	10.4	5.5	8.5	5.7	9.6
WINTER	1200	4.0	7.4	4.0	3.7	2.3	3.6	5.5	11.3	11.0	9.8	6.5	11.7	5.1	4.4	4.1	5.8
	1500	3.4	8.1	4.2	5.3	3.1	6.3	5.6	10.3	7.3	7.0	7.3	12.6	6.3	5.0	3.3	4.9
	1800	2.1	4.6	2.3	3.3	3.5	6.8	5.7	7.7	6.2	7.7	9.2	16.6	10.2	7.0	3.7	3.4
	2100	3.3	4.0	1.5	0.4	0.3	0.8	1.1	6.9	12.4	12.8	9.5	18.2	7.3	9.8	6.7	5.0
	2400	4.1	5.9	2.7	0.5	0.0	1.4	0.9	6.4	11.0	11 9	7.3	11.9	11.0	6.8	5.9	12.3
	0300	2.8	5.0	4.1	1.3	0.6	3.8	2.8	9.8	12.9	18.6	8.5	8.8	6.6	5.0	3.2	6.0
	0600	4.8	4.1	3.4	1.0	0.4	2.0	3.1	8.3	15.7	15.8	7.0	11 3	4.6	6.4	4.5	7.4
	0900	7.1	9.3	3.5	4.4	2.1	4.2	5.8	11.5	11.2	9.6	4.5	6.6	3.6	5.0	4.6	7.1
SPRING	1200	5.5	11.2	7.9	7.1	4.8	8.1	7.0	7.4	4.4	5.0	4.2	8.5	4.0	4.5	4.3	6.3
	1500	2.9	8.3	7.0	10.1	7.1	14.5	7.2	4.7	2.2	3.4	5.9	10.3	4.1	5.4	3.1	3.8
	1800	1.7	4.9	11.9	12.9	9.8	14.0	5.8	4.1	2.5	3.5	5.8	11.3	3.9	2.5	2.3	3.0
	2100	3.1	4.3	5.8	6.1	3.2	7.2	7.6	11.8	7.1	8.6	7.9	11.1	4.8	5.0	2.3	4.1
	2400	3.6	8.4	2.8	1.2	1.2	1.6	4.8	8.0	14.4	16.8	4.8	11.2	5.6	7.6	2.0	6.0

TABLE 27p(i)

TOWNSVILLE MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	8.6	10.6	12.3	11.6	9.9	9.5	7.4	8.9	9.1	9.2	8.5	9.6	13.7	9.7	10.3	9.2
	0600	9.8	9.1	11.9	11.0	8.8	8.2	8.0	8.0	9.4	6.7	8.8	5.6	7.1	10.7	8.6	8.9
	0900	11.0	12.2	12.6	13.9	14.4	11.8	11.1	10.7	12.4	9.8	9.3	7.3	11.3	11.1	12.1	12.7
SUMMER	1200	15.6	16.9	18.6	19.1	18.1	15.7	12.6	13.6	14.8	13.7	12.2	9.0	10.6	11.9	13.2	14.6
	1500	18.1	20.4	21.1	21.8	20.7	15.5	15.9	15.4	19.1	16.4	14.3	15.5	13.4	12.1	15.4	15.7
	1800	14.9	16.6	17.9	20.4	19.4	13.1	14.4	16.9	11.9	15.6	23.6	8.0	12.2	11.9	13.8	14.0
	2100	10.6	11.1	12.3	14.6	15.1	12.6	11.2	12.0	9.4	10.4	17.1	10.1	8.7	8.5	9.8	9.8
	2400	8.6	10.0	11.3	11.4	11.3	9.4	9.6	11.4	9.9	10.3	11.1	6.5	10.3	9.4	9.7	8.9
	0300	11.1	12.6	10.9	9.8	9.4	9.5	9.1	8.2	9.8	10.9	11.1	6.9	12.4	6.6	10.1	10.8
	0600	11.7	13.9	8.5	9.9	9.2	8.4	8.1	7.5	10.0	10.6	7.4	8.6	13.0	7.2	12.6	8.4
	0900	10.1	9.9	10.9	11.3	12.1	11.9	12.0	10.9	12.3	11.7	10.8	6.5	10.7	10.4	10.5	11.0
AUTUMN	1200	13.1	14.9	17.6	19.0	19.4	16.4	14.3	15.3	17.3	15.1	7.7	7.8	10.1	11.8	13.2	11.3
	1500	15.8	18.9	20.4	23.4	20.7	16.1	14.2	14.4	13.2	13.1	13.9	13.5	0.0	12.6	12.6	14.0
	1800	10.8	12.4	14.7	17.8	16.4	12.0	9.1	10.4	11.5	11.8	8.4	11.6	9.7	9.2	9.1	9.9
	2100	8.3	10.2	10.6	12.4	11.8	10.3	7.6	9.9	10.1	11.8	22.2	7.4	8.5	4.6	9.0	8.4
	2400	12.1	12.2	10.3	10.4	9.7	9.4	8.6	7.4	8.0	13.9	16.4	6.6	13.9	8.3	12.8	7.0
	0300	6.5	8.0	12.2	10.6	9.7	8.3	7.3	8.7	10.8	10.3	7.0	5.4	4.3	5.6	9.8	6.3
	0600	6.3	7.2	9.1	11.0	9.3	8.2	7.0	7.9	11.7	10.5	8.2	5.4	5.5	5.8	7.4	5.6
	0900	9.6	9.6	9.9	13.1	13.5	10.1	9.4	12.0	14.8	12.3	13.1	5.8	7.2	8.4	6.3	7.6
WINTER	1200	13.4	14.3	17.0	19.9	19.6	14.2	14.3	16.2	17.7	16.7	12.6	6.2	4.8	14.4	15.0	12.4
	1500	17.0	18.8	21.4	23.9	21.5	14.5	13.3	15.6	15.8	15.7	16.5	12.1	11.8	13.0	14.3	14.8
	1800	9.8	11.8	13.6	16.6	18.2	11.9	8.1	10.9	10.3	11.0	8.6	7.9	7.2	7.2	8.0	8.4
	2100	11.7	8.2	10.3	12.1	11.4	8.4	7.0	8.9	9.8	7.1	7.0	5.0	5.6	7.6	4.3	6.0
	2400	8.3	7.4	11.0	10.5	9.8	7.9	7.3	9.7	9.5	10.2	5.6	5.6	8.1	5.5	0.0	5.4
	0300	9.8	11.5	11.1	11.5	10.2	8.0	6.5	8.7	11.1	8.8	10.6	5.0	6.5	7.4	9.2	8.5
	0600	9.6	11.1	11.5	10.6	9.8	7.1	5.8	7.3	10.7	10.5	6.0	4.5	6.3	8.2	9.5	8.6
	0900	13.7	13.8	15.4	17.2	17.5	14.1	12.4	16.7	18.3	13.5	6.0	6.2	10.3	12.4	13.3	13.6
SPRING	1200	18.2	20.6	22.3	25.5	22.9	17.1	16.4	16.1	18.0	16.5	15.1	12.3	14.6	14.5	16.1	17.7
	1500	19.7	23.6	25.8	28.2	23.1	16.8	16.9	17.7	18.6	17.8	21.3	13.0	7.4	18.1	17.1	18.2
	1800	15.5	16.9	19.2	23.7	21.3	17.4	12.4	16.1	17.8	14.3	27.8	12.3	14.4	11.5	13.0	14.0
	2100	10.0	11.4	13.7	16.6	16.2	11.6	8.3	9.9	12.4	10.4	3.7	6.7	10.2	9.8	8.6	9.5
	2400	8.5	11.8	12.1	12.8	11.9	9.0	6.6	10.1	11.1	7.4	5.0	7.0	5.6	6.2	9.6	8.6

TABLE 27p(ii)

TOWNSVILLE PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	6.2	7.8	5.7	7.9	15.2	21.9	5.6	4.8	1.9	1.4	1.0	1.2	0.6	2.0	3.7	13.1
	0600	5.6	7.3	3.7	7.2	13.5	22.4	8.1	9.5	3.9	1.6	1.2	1.2	0.5	1.9	2.5	9.9
	0900	5.2	10.7	8.5	12.8	14.1	16.3	5.2	4.3	2.6	1.8	0.9	1.5	0.7	5.0	3.8	6.6
SUMMER	1200	10.5	31.5	13.4	11.9	6.5	4.8	1.8	1.9	0.8	0.6	0.5	0.5	0.5	3.0	3.9	8.0
	1500	9.3	35.3	19.6	9.7	4.4	2.5	0.9	1.1	0.4	0.5	0.2	0.4	0.1	1.5	3.9	10.2
	1800	6.4	30.6	20.2	12.7	6.3	2.9	0.6	0.7	0.3	0.5	0.1	0.3	0.5	1.9	5.2	11.0
	2100	7.6	17.6	16.1	19.6	10.8	6.0	1.1	1.0	0.5	0.5	0.3	0.8	0.4	1.5	2.8	13.5
	2400	7.2	11.3	10.1	15.1	13.8	14.7	2.9	2.6	1.1	1.4	0.5	0.7	0.7	1.7	4.0	12.2
	0300	0.8	1.8	0.7	4.4	14.8	32.7	13.6	18.6	6.6	2.1	0.2	0.5	0.5	0.5	0.8	1.4
	0600	0.7	0.8	0.6	2.9	10.2	25.0	15.9	25.4	10.4	4.1	0.9	0.9	0.3	0.7	0.4	0.9
	0900	0.9	1.5	1.4	5.9	13.6	32.6	15.0	13.7	8.2	3.5	0.4	0.9	0.6	0.7	0.4	0.6
AUTUMN	1200	6.3	18.9	11.6	19.3	15.0	11.3	3.4	4.0	2.5	1.3	0.2	0.4	0.3	1.7	1.8	2.1
	1500	8.6	31.6	19.3	16.3	6.1	4.5	1.6	2.7	1.6	0.8	0.1	0.1	0.0	1.4	1.8	3.6
	1800	3.9	22.8	21.5	25.9	8.2	3.7	1.3	1.9	0.9	0.5	0.1	0.3	0.1	2.1	3.2	3.7
	2100	1.9	5.1	7.2	25.3	27.0	19.5	3.6	3.9	1.4	0.7	0.1	0.3	0.3	0.3	1.2	2.4
	2400	0.8	2.8	2.9	14.0	26.0	31.5	8.3	6.4	1.8	1.4	0.5	0.6	0.3	0.7	0.9	1.2
	0300	0.5	0.8	1.2	6.4	14.6	25.5	10.7	21.9	9.6	5.5	0.9	1.1	0.2	0.3	0.5	0.4
	0600	0.4	0.6	0.7	3.7	8.0	20.1	14.0	25.5	14.1	8.8	1.1	1.0	0.4	0.7	0.5	0.3
	0900	0.3	0.6	1.4	5.8	10.8	22.2	12.6	20.3	14.8	6.9	1.0	0.6	0.3	1.0	0.7	0.7
WINTER	1200	5.4	19.2	14.0	18.7	10.0	7.9	3.6	7.9	4.6	2.8	0.4	0.1	0.2	1.6	1.0	2.6
	1500	8.9	33.8	20.7	11.9	3.8	2.7	1.7	4.3	3.0	1.6	0.3	0.2	0.2	1.0	1.7	4.1
	1800	3.4	23.1	23.4	23.6	5.0	2.7	1.4	3.8	2.0	0.8	0.1	0.7	0.9	2.8	2.6	3.8
	2100	0.3	2.8	6.1	21.5	25.8	21.4	6.0	7.4	3.9	1.5	0.5	0.4	0.2	0.5	0.3	1.3
	2400	0.2	0.8	2.9	13.1	23.5	27.9	9.9	12.8	4.2	2.1	0.6	0.2	0.3	0.6	0.0	1.0
	0300	6.9	9.1	7.7	11.1	17.1	19.1	4.9	4.1	1.8	1.0	0.4	0.3	0.1	1.1	3.4	11.9
	0600	6.5	8.1	4.3	8.3	13.3	20.8	6.4	9.8	4.6	1.6	0.5	0.4	0.6	1.3	3.2	10.4
	0900	6.2	13.9	11.1	17.6	12.8	9.6	2.5	3.5	2.6	1.1	0.3	0.5	1.1	4.9	5.1	7.3
SPRING	1200	12.2	36.0	18.8	9.9	2.0	1.1	0.7	1.5	0.8	0.7	0.2	0.2	0.3	2.5	4.5	8.7
	1500	10.7	40.6	22.5	6.0	0.9	0.3	0.2	0.4	0.5	0.3	0.1	0.1	0.0	1.0	4.7	11.7
	1800	7.3	32.5	24.1	10.0	1.4	0.8	0.1	0.4	0.2	0.2	0.0	0.2	0.3	2.2	6.2	13.9
	2100	7.5	18.3	19.2	21.9	8.8	3.2	0.4	0.9	0.4	0.3	0.1	0.4	0.2	1.4	4.0	13.1
	2400	6.8	12.0	11.2	18.4	16.8	11.9	1.8	2.2	0.6	0.5	0.2	0.3	0.1	0.8	3.9	12.7

TABLE 27q(i)

WAGGA MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	11.8	11.7	14.1	11.7	8.9	8.7	9.7	11.1	14.1	15.1	14.7	10.2	12.2	9.2	13.6	13.4
	0600	12.8	10.4	12.9	10.8	7.6	8.2	11.3	10.7	11.0	16.6	15.8	12.2	10.3	7.1	8.3	12.2
	0900	13.2	13.6	15.7	13.4	12.0	11.8	12.9	13.4	16.1	19.3	20.1	14.4	11.8	12.2	14.0	13.9
SUMMER	1200	13.5	13.4	15.8	14.3	12.0	10.6	13.4	13.0	18.1	19.6	19.9	18.5	15.7	14.3	14.7	13.3
	1500	14.1	13.7	16.6	14.3	11.0	11.8	13.3	14.3	18.5	19.9	23.5	20.5	18.3	16.1	14.8	14.6
	1800	12.9	12.9	17.0	14.6	12.6	12.4	15.4	14.1	17.8	20.6	20.9	18.0	17.1	11.9	16.7	13.1
	2100	14.5	15.0	17.2	13.4	9.4	12.3	12.3	11.0	12.3	13.5	14.4	11.7	12.5	12.5	15.3	13.8
	2400	13.8	11.7	14.7	11.0	9.7	8.7	15.5	12.0	13.5	13.7	14.8	9.7	6.8	8.4	9.7	17.8
	0300	16.1	10.9	11.9	10.0	7.6	7.9	11.1	8.9	10.8	13.5	14.1	14.8	14.4	8.8	11.4	13.9
	0600	11.9	9.3	11.2	8.9	7.5	7.7	10.4	10.9	10.5	12.8	14.3	13.2	12.0	9.1	9.8	12.5
	0900	12.2	12.7	13.2	10.4	8.4	9.6	12.5	12.6	13.1	17.7	16.3	14.2	12.7	10.4	15.2	13.9
AUTUMN	1200	12.9	12.5	13.6	11.5	9.5	9.2	14.2	14.3	18.0	16.2	17.1	16.1	14.6	12.9	14.4	11.4
	1500	12.0	12.1	13.7	11.8	10.8	10.1	11.2	12.1	16.1	17.8	17.8	16.1	16.2	13.2	16.2	11.8
	1800	11.3	11.8	12.2	10.1	7.9	9.5	12.0	10.0	12.7	14.0	14.6	12.9	14.6	11.4	11.3	10.6
	2100	14.3	12.3	14.4	10.5	8.2	9.2	11.7	10.9	9.5	13.7	16.1	13.4	14.9	11.3	11.4	14.7
	2400	10.8	15.2	12.5	9.6	8.0	6.9	12.5	7.5	13.3	14.3	16.7	16.3	9.3	10.6	13.9	11.1
	0300	11.5	8.4	11.4	8.2	7.9	8.0	10.2	9.1	10.8	12.4	17.9	15.6	13.7	10.5	12.6	11.7
	0600	14.6	8.3	9.5	7.9	7.8	7.7	12.1	9.4	13.5	14.3	19.2	14.8	13.9	11.3	9.9	9.7
	0900	12.2	9.2	9.7	8.2	7.9	7.9	12.0	10.2	10.5	16.9	16.7	16.3	14.9	11.1	10.7	13.2
WINTER	1200	13.4	10.8	11.6	9.7	9.1	10.0	11.1	12.2	15.1	19.4	20.7	17.1	15.3	13.8	12.9	12.3
	1500	12.5	12.2	13.2	10.4	9.0	8.8	10.2	11.4	16.2	17.7	19.8	16.9	16.1	14.0	13.7	12.6
	1800	12.9	9.1	9.7	9.1	6.8	8.2	8.6	8.9	8.4	10.9	13.0	12.9	12.4	10.8	12.5	10.2
	2100	15.9	10.7	10.8	8.2	7.8	8.2	11.1	10.7	9.7	14.9	15.4	15.2	14.5	13.7	11.3	14.2
	2400	16.5	8.5	11.4	7.7	7.5	7.4	7.1	5.1	9.0	17.8	14.5	15.3	14.6	13.5	12.7	10.9
	0300	12.4	10.8	12.9	10.4	8.3	7.9	12.3	9.4	11.3	15.7	16.3	14.1	12.9	8.9	9.2	13.6
	0600	13.6	9.7	12.1	9.9	7.6	7.8	9.8	11.6	10.0	14.4	15.7	13.6	12.5	8.6	11.1	13.1
	0900	12.3	12.3	13.7	10.9	10.3	9.5	12.0	12.1	12.4	19.2	19.7	18.3	14.2	10.7	12.4	14.4
SPRING	1200	14.8	12.7	15.4	12.7	13.6	11.0	10.5	12.7	17.1	18.9	20.9	18.6	18.6	14.5	15.0	14.5
	1500	14.3	14.3	15.2	14.0	11.5	11.9	11.1	12.6	18.1	19.4	21.2	20.5	18.2	15.5	13.9	14.8
	1800	12.8	10.6	12.1	10.4	10.4	8.5	11.4	12.1	13.8	16.0	17.1	16.4	14.7	12.3	12.5	14.4
	2100	15.7	11.9	13.0	10.0	9.2	8.8	11.2	9.6	10.1	13.0	14.9	13.2	14.1	12.1	13.5	14.6
	2400	15.3	12.0	9.7	8.5	7.6	10.7	4.7	6.3	12.6	15.8	13.8	12.3	13.4	10.8	9.3	11.9

TABLE 27q(ii)

WAGGA PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	1.7	8.6	21.0	29.6	8.0	5.1	1.6	1.9	1.4	4.7	4.9	3.9	1.2	1.5	0.8	3.1
	0600	1.8	7.1	19.9	31.8	10.4	5.4	1.5	1.2	1.4	4.1	4.6	5.1	1.6	1.4	1.1	1.6
	0900	3.8	13.5	23.5	18.2	3.6	2.1	1.3	1.6	1.4	5.5	6.6	6.0	2.4	2.9	2.4	5.1
SUMMER	1200	5.1	10.1	9.8	7.5	3.0	2.3	0.9	1.8	2.5	8.5	10.4	11.7	7.3	8.5	4.7	7.1
	1500	3.2	6.9	6.8	6.4	2.7	2.4	1.5	3.8	4.6	13.8	13.1	14.4	7.1	6.2	2.9	5.1
	1800	2.3	9.1	8.9	6.4	2.2	2.4	2.0	4.4	5.5	17.7	15.6	11.1	3.9	3.4	1.7	3.5
	2100	2.4	10.4	15.0	11.5	3.0	4.4	3.8	6.2	7.3	17.2	9.6	3.6	1.3	1.2	1.1	2.1
	2400	5.3	16.5	27.7	12.9	4.0	3.3	3.0	1.3	5.3	7.6	5.0	2.6	1.0	0.7	1.7	2.3
	0300	1.1	4.7	12.4	29.2	13.4	7.9	2.4	1.4	1.1	3.7	4.9	7.0	3.4	4.1	1.4	2.0
	0600	1.6	2.9	10.6	29.9	16.7	8.3	2.3	1.2	0.7	4.3	3.2	8.3	3.5	3.0	1.9	1.5
	0900	1.6	5.3	15.9	33.6	10.4	4.5	1.2	1.0	1.0	4.2	4.6	6.5	3.2	3.5	1.4	3.2
AUTUMN	1200	5.1	9.3	12.9	12.7	2.8	2.3	1.7	1.6	1.8	8.7	8.6	11.5	5.9	7.0	3.5	5.6
	1500	3.2	7.3	6.9	6.9	1.9	2.6	2.2	3.0	3.7	13.8	11.5	15.4	7.1	7.2	2.6	4.5
	1800	2.3	6.7	7.9	8.8	3.2	2.9	1.5	4.3	5.3	16.9	14.5	13.1	4.2	4.3	1.4	2.6
	2100	2.5	5.4	13.4	16.9	7.1	4.1	3.5	4.5	4.1	11.1	7.8	8.1	3.6	3.9	1.6	2.5
	2400	4.4	14.0	21.0	16.2	8.1	4.1	1.5	0.7	2.2	5.5	3.3	5.5	3.7	4.8	2.6	2.2
	0300	1.5	3.3	5.5	24.3	12.6	7.5	1.9	1.3	0.8	3.3	4.9	14.6	5.6	6.5	3.3	3.0
	0600	1.4	3.5	5.8	25.4	15.2	6.5	1.0	1.5	0.9	4.2	4.8	11.7	6.0	6.4	3.0	2.7
	0900	1.4	4.0	8.5	26.0	12.3	5.0	1.0	0.7	0.8	3.3	5.6	11.6	5.7	7.4	3.2	3.3
WINTER	1200	2.8	7.6	11.5	15.2	3.5	2.5	1.5	1.8	0.8	6.3	8.9	14.0	7.5	8.3	3.2	4.6
	1500	3.4	5.7	6.8	7.2	1.8	1.7	1.6	2.5	2.0	11.6	13.1	17.8	8.8	8.4	3.7	3.8
	1800	3.2	4.5	5.9	9.8	3.7	3.5	1.8	3.3	4.0	10.9	13.5	17.2	7.7	6.2	2.0	2.8
	2100	3.3	3.7	7.1	18.1	6.2	5.2	3.0	2.9	2.2	6.1	8.9	12.5	6.9	6.5	3.0	4.4
	2400	3.0	4.7	6.7	16.4	11.0	7.4	2.0	1.3	2.3	3.3	5.0	13.7	9.4	7.4	2.3	4.0
	0300	2.8	4.6	11.3	24.2	9.4	6.2	1.7	1.5	1.7	4.6	6.9	9.1	4.8	5.4	2.2	3.6
	0600	2.2	4.0	11.0	23.9	12.6	6.3	1.1	0.9	1.1	4.2	6.2	9.0	4.8	6.6	2.7	3.4
	0900	3.5	9.4	16.4	19.0	4.0	2.0	1.3	1.5	2.0	7.2	8.2	10.1	4.7	5.0	3.1	3.8
SPRING	1200	4.7	7.8	7.1	6.1	1.2	1.8	0.8	2.2	2.3	9.7	12.5	16.3	7.9	9.1	4.7	5.6
	1500	3.8	5.7	4.8	4.9	1.5	1.6	1.4	2.2	4.2	13.5	17.3	17.2	7.8	6.6	2.6	5.0
	1800	3.0	5.9	6.4	7.3	2.2	2.9	1.8	4.0	5.7	18.9	15.9	13.1	4.5	3.8	2.1	2.7
	2100	3.9	5.7	9.7	14.5	4.6	4.0	3.6	5.9	6.4	12.9	9.8	8.1	2.9	3.2	1.7	3.2
	2400	4.4	7.3	13.9	15.0	4.4	3.3	1.5	1.8	1.8	8.8	9.5	9.1	4.7	6.2	3.3	5.1

TABLE 27r(i)

WILLIAMTOWN MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	6.6	9.6	9.8	8.1	11.1	15.1	17.7	21.7	18.2	14.1	9.9	8.9	12.9	8.1	4.8	8.5
	0600	6.3	9.4	7.8	8.2	14.3	15.3	18.1	18.6	16.2	12.2	7.8	8.7	8.3	8.0	8.2	6.0
	0900	10.3	12.2	13.0	12.7	14.4	15.2	17.6	19.9	17.9	12.6	11.7	12.6	14.8	10.2	8.2	7.5
SUMMER	1200	11.7	14.6	15.8	17.9	16.8	16.0	19.7	22.3	25.1	17.7	16.1	18.9	21.7	15.0	9.7	9.4
	1500	14.1	19.4	22.8	20.0	18.4	18.1	22.3	25.3	26.7	23.2	21.4	22.1	29.1	19.7	14.8	13.2
	1800	15.0	18.0	19.8	16.3	15.0	15.6	18.7	22.4	24.0	20.3	17.2	29.9	25.8	14.9	12.0	10.7
	2100	11.5	12.5	12.0	9.7	11.6	13.7	16.9	19.6	21.7	17.6	9.3	12.1	15.8	11.2	12.4	11.8
	2400	-	-	-	-	-	-	7.4	-	-	-	-	-	-	-	-	-
	0300	9.4	7.9	8.7	9.9	15.1	14.9	22.0	20.8	20.5	14.8	12.0	15.6	15.2	10.4	7.0	8.8
	0600	6.0	8.9	9.0	8.5	13.7	16.8	18.2	20.3	19.5	14.2	11.2	14.3	14.1	9.4	8.4	9.4
	0900	10.6	10.2	11.2	13.0	12.1	18.6	19.4	17.3	18.8	14.1	13.4	17.5	16.5	10.2	8.4	7.3
AUTUMN	1200	10.9	11.5	13.7	13.4	14.0	15.3	17.5	19.5	19.7	18.1	14.4	21.4	23.1	14.4	10.4	8.2
	1500	10.9	14.0	15.7	15.1	14.9	14.8	17.6	20.3	21.8	18.8	15.0	23.8	25.4	19.8	8.9	9.2
	1800	10.3	10.4	11.0	9.7	9.9	13.2	16.4	17.5	17.0	15.0	14.5	18.6	19.2	14.5	9.6	7.1
	2100	8.6	8.9	8.8	9.9	9.4	15.8	18.8	19.4	17.3	14.2	11.8	17.9	18.2	12.8	7.5	6.5
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	6.9	10.6	9.6	16.1	18.6	22.8	26.3	23.7	18.9	17.7	13.6	18.4	17.4	11.7	14.3	8.5
	0600	10.1	8.8	10.1	16.2	18.0	27.5	28.6	20.8	11.1	16.4	13.2	17.1	16.8	11.8	10.4	7.7
	0900	9.9	8.8	9.5	21.9	21.9	23.0	28.0	23.1	21.5	19.2	14.1	19.8	19.6	12.1	14.1	8.1
WINTER	1200	10.7	11.2	11.4	17.9	21.0	17.7	19.9	18.8	19.0	18.4	15.5	22.7	24.5	17.0	10.8	8.4
	1500	8.8	10.7	12.9	11.9	15.5	12.9	15.6	18.1	21.2	18.3	19.5	24.3	27.9	18.9	11.2	8.9
	1800	6.6	7.4	8.5	9.8	13.9	14.4	17.0	16.9	18.7	15.7	13.0	19.8	20.2	13.7	9.4	6.2
	2100	6.2	9.1	7.7	14.4	20.3	20.3	19.8	17.4	18.0	15.7	13.0	18.7	19.4	14.8	7.2	6.7
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	8.8	10.9	7.9	10.5	12.1	15.7	16.0	20.3	16.5	13.2	11.5	12.6	14.8	9.7	7.3	8.7
	0600	7.9	9.5	9.7	10.9	11.2	14.0	18.3	20.3	16.5	14.0	12.3	13.2	13.9	9.9	6.7	7.0
	0900	12.1	13.0	14.1	12.8	16.3	14.2	17.6	18.8	18.2	18.0	16.1	19.3	20.4	12.1	8.4	7.6
SPRING	1200	12.1	14.4	17.5	15.7	15.4	15.9	20.1	21.6	26.8	20.7	21.7	25.7	29.1	19.4	12.1	9.8
	1500	14.4	18.5	21.8	18.8	17.6	17.1	21.2	25.2	33.0	24.0	22.3	29.8	31.4	23.5	17.4	9.6
	1800	9.7	14.9	15.4	12.5	12.8	13.9	16.9	20.0	22.1	17.9	20.2	23.4	24.7	15.4	8.5	9.2
	2100	10.9	11.2	10.3	9.6	11.0	14.0	17.5	17.6	20.1	16.4	15.6	17.0	17.5	13.0	7.8	8.9
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 27r(ii)

WILLIAMTOWN PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	2.2	11.0	7.3	7.5	5.1	10.9	6.7	16.7	8.2	4.9	2.8	5.2	4.1	.9	1.0	2.7
	0600	2.1	7.2	3.7	6.3	4.5	9.3	7.1	18.3	8.5	5.9	2.6	9.8	6.5	6.0	0.6	1.7
	0900	3.9	9.6	5.5	6.3	5.0	11.7	7.0	13.9	5.8	4.6	1.9	5.7	5.3	6.9	2.6	4.4
SUMMER	1200	2.5	5.7	4.6	8.6	9.7	21.8	11.5	14.1	2.9	1.5	0.7	2.8	4.7	5.3	2.1	1.5
	1500	0.7	6.5	10.6	15.7	14.1	20.1	9.8	11.1	2.3	0.8	0.3	1.2	2.6	3.0	0.6	0.7
	1800	1.5	13.3	17.9	17.9	9.5	13.4	6.9	11.2	2.3	1.1	0.3	0.9	0.9	1.7	0.4	0.8
	2100	3.9	23.9	14.2	11.6	5.5	10.7	6.5	12.2	3.6	1.8	0.5	1.3	0.9	1.2	0.6	1.7
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	2.1	4.3	1.7	3.7	1.8	5.5	3.8	8.2	3.3	4.8	4.7	20.0	21.5	11.5	1.0	1.9
	0600	0.9	2.8	1.4	3.1	2.0	5.3	3.8	5.4	2.4	5.4	4.1	21.0	26.0	13.7	1.8	1.1
	0900	1.8	2.9	1.9	2.6	1.9	5.0	2.7	5.6	2.9	5.8	3.6	18.5	24.1	15.4	2.8	2.4
AUTUMN	1200	1.8	3.9	3.0	5.3	3.7	10.7	6.7	11.8	4.5	5.1	2.5	12.4	13.9	9.9	2.9	2.0
	1500	1.2	3.9	5.0	8.9	8.1	15.9	10.5	12.0	3.9	3.2	1.7	8.8	9.2	5.5	1.3	0.8
	1800	1.0	10.6	14.0	13.6	5.4	10.2	7.0	10.8	3.7	3.7	1.9	6.3	5.5	3.9	0.9	1.6
	2100	4.2	16.7	7.1	5.5	2.6	8.1	6.3	8.2	3.2	4.6	4.1	10.9	9.9	5.0	1.4	2.2
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	0.6	1.5	0.3	0.8	1.2	2.4	1.5	1.6	0.9	5.5	5.2	31.1	33.1	12.4	1.1	0.8
	0600	0.5	1.2	0.4	1.0	0.8	1.6	1.3	1.9	0.3	4.6	3.4	31.8	35.6	13.4	1.3	1.0
	0900	0.7	0.8	0.3	0.5	0.8	1.8	0.8	1.3	0.7	3.4	4.1	28.0	40.6	14.5	1.1	0.7
WINTER	1200	0.9	1.8	0.6	1.1	1.2	2.8	2.2	5.6	4.0	8.7	5.2	23.8	28.2	11.3	1.9	0.8
	1500	0.5	1.8	1.2	2.4	3.2	7.7	6.4	11.5	5.4	6.7	3.5	16.8	21.3	9.1	1.3	1.1
	1800	0.8	4.9	3.4	3.9	1.8	3.8	3.6	9.0	4.9	9.1	4.1	18.0	18.8	10.4	2.1	1.5
	2100	2.1	5.0	1.4	1.4	1.3	3.4	2.2	4.5	2.3	7.5	6.1	23.8	23.7	10.5	2.0	2.7
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0300	2.9	8.0	2.0	3.5	1.4	4.1	3.2	9.3	4.9	6.0	4.1	19.8	17.8	9.5	1.3	2.2
	0600	2.2	4.5	1.6	2.3	1.8	3.0	2.7	6.8	4.1	4.9	4.1	24.3	22.8	11.5	1.4	1.9
	0900	2.8	5.6	2.4	2.6	1.6	4.7	3.8	9.0	4.7	6.8	3.5	15.6	18.5	12.0	2.8	3.5
SPRING	1200	2.1	4.6	2.8	4.1	5.0	13.9	9.4	12.5	2.9	3.0	2.1	10.4	13.4	8.4	2.9	2.5
	1500	1.1	5.4	6.8	10.7	9.0	16.2	9.4	11.1	2.2	1.5	1.4	6.7	9.4	6.5	1.3	1.3
	1800	1.9	15.8	14.9	12.4	6.0	8.4	6.1	10.5	2.2	1.8	1.9	4.8	6.2	4.2	1.4	1.5
	2100	6.3	23.2	7.3	6.5	2.2	5.9	5.0	11.4	3.5	3.5	2.6	8.2	7.1	3.1	0.8	3.3
	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 27s(i)

WOOMERA MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	14.7	12.9	10.3	12.1	11.6	18.2	23.5	24.2	24.9	23.7	20.2	17.2	13.9	12.3	14.7	12.3
	0600	15.4	11.0	9.0	10.4	10.9	16.2	20.3	20.7	21.3	18.8	14.2	13.0	11.6	6.5	13.4	10.9
	0900	23.2	19.0	16.6	15.2	16.9	20.7	23.4	25.6	25.4	23.7	16.9	15.6	16.2	18.4	21.1	21.0
SUMMER	1200	19.7	14.7	15.4	12.8	16.2	17.8	21.2	21.2	21.3	19.3	18.8	16.4	17.4	18.5	21.8	20.5
	1500	16.5	14.7	15.4	16.0	14.8	17.9	21.5	21.7	20.5	20.4	19.7	17.9	17.7	21.7	21.6	17.8
	1800	16.5	15.3	15.4	14.3	15.6	19.2	21.8	20.8	21.9	21.8	21.6	19.3	14.8	16.6	17.5	14.9
	2100	12.2	12.6	11.1	12.5	16.6	21.9	24.9	19.8	23.8	21.8	18.9	10.9	35.3	11.9	10.0	15.2
	2400	14.9	9.4	13.2	14.8	15.5	20.3	22.5	24.6	29.4	26.6	22.2	46.3	0.0	14.8	13.7	12.2
	0300	11.0	11.0	8.5	9.4	11.2	14.0	19.0	17.5	16.8	14.5	12.3	13.1	12.0	12.2	10.7	12.0
	0600	12.0	10.6	8.1	8.6	9.1	12.4	16.8	15.5	14.8	12.6	11.0	11.3	10.2	10.0	10.5	11.3
	0900	15.3	13.6	11.3	12.7	13.8	17.4	20.2	19.6	18.5	14.6	16.0	17.0	15.5	11.8	13.6	15.1
AUTUMN	1200	18.7	14.8	12.9	11.6	13.9	16.0	18.6	18.8	20.3	20.1	20.6	19.5	13.8	16.5	20.3	18.8
	1500	16.0	12.6	13.0	11.6	11.6	15.0	18.1	17.9	20.5	18.6	20.1	20.8	19.4	16.9	19.3	18.8
	1800	12.4	9.7	12.8	10.6	12.1	13.8	17.7	14.8	17.4	18.0	18.1	19.4	17.6	12.9	12.2	13.3
	2100	11.6	9.8	7.7	10.1	9.9	15.4	17.3	16.1	17.1	15.6	12.6	12.8	17.7	8.1	9.2	12.2
	2400	12.8	7.4	8.5	7.6	9.8	12.2	15.8	14.4	12.8	10.1	11.1	13.0	9.3	13.9	9.5	11.7
	0300	14.0	11.9	7.9	8.4	11.5	11.0	13.1	13.3	13.9	10.9	12.3	14.8	17.6	13.7	13.7	13.9
	0600	13.4	11.5	8.9	7.2	8.1	9.4	13.6	12.7	12.9	11.8	11.3	12.3	14.7	11.4	13.5	13.8
	0900	14.6	11.7	8.6	9.0	9.0	10.7	13.0	14.4	12.0	14.0	14.3	15.5	14.1	11.5	14.5	15.6
WINTER	1200	20.1	15.7	11.6	12.0	13.8	15.1	16.5	18.6	18.8	21.1	22.8	22.0	20.7	18.3	22.7	22.0
	1500	17.1	15.0	10.1	11.5	12.2	14.3	17.7	17.0	19.2	21.4	23.2	22.4	21.8	20.2	23.3	21.6
	1800	13.0	11.3	8.8	8.9	8.6	11.3	13.9	12.5	15.3	17.4	19.2	18.6	17.9	13.0	16.3	14.4
	2100	13.0	11.2	8.5	8.6	6.4	9.6	13.4	12.7	13.3	14.3	12.4	13.8	14.3	11.5	14.7	14.1
	2400	12.2	6.9	7.9	8.4	8.4	9.8	11.5	10.7	11.7	9.8	8.8	10.3	9.9	10.2	12.0	12.4
	0300	15.4	13.3	10.8	10.7	11.5	15.0	19.2	19.5	20.4	21.0	18.6	16.8	15.0	15.4	12.6	16.2
	0600	15.4	12.9	11.1	10.4	10.4	13.7	16.7	17.7	17.8	16.6	16.1	14.8	9.8	12.4	13.6	14.9
	0900	24.1	19.5	15.9	14.5	17.0	17.7	21.7	22.8	24.2	23.8	25.3	25.0	21.1	21.1	23.6	23.1
SPRING	1200	21.7	18.3	15.7	13.4	11.4	15.4	19.5	20.1	22.7	24.3	23.1	23.3	19.5	22.6	27.3	25.7
	1500	19.8	14.4	11.1	11.7	11.8	15.7	18.3	19.1	22.2	23.8	26.1	25.6	19.9	22.6	24.7	24.9
	1800	18.4	11.7	15.2	12.2	12.3	14.0	18.5	18.3	22.1	24.1	26.9	24.4	19.5	21.1	19.5	19.8
	2100	14.7	11.9	8.8	11.4	10.7	17.5	19.0	18.3	21.1	24.6	23.5	17.5	15.6	19.6	10.9	16.0
	2400	12.0	11.3	11.9	9.9	12.6	16.1	19.7	18.9	18.5	17.6	13.4	16.2	15.7	5.6	19.5	16.0

TABLE 27s(ii)

WOOMERA PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

	TIME	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	N
	0300	2.5	4.9	1.6	5.5	6.6	27.7	22.8	15.7	3.0	4.0	0.8	0.6	0.1	0.6	0.6	3.0
	0600	2.3	4.2	3.0	6.9	7.2	25.8	20.0	17.6	4.2	3.9	1.1	0.5	0.2	0.3	0.7	2.3
	0900	4.8	8.7	4.6	9.2	8.1	19.9	14.9	12.2	3.8	3.0	0.8	0.9	0.6	1.2	1.8	5.5
SUMMER	1200	4.8	7.2	3.1	6.1	5.3	13.1	11.0	15.3	6.1	6.3	1.8	2.5	2.3	4.1	3.4	7.8
	1500	1.9	4.0	1.8	4.8	3.5	12.4	9.9	19.0	9.5	11.4	3.9	5.3	1.7	3.5	2.5	5.0
	1800	1.5	3.8	1.7	5.1	3.9	12.9	13.4	21.1	11.6	11.4	3.3	2.5	0.8	2.3	1.4	3.1
	2100	1.8	3.8	3.5	6.0	4.6	23.5	18.7	14.6	9.7	8.9	1.1	0.7	0.2	0.4	0.4	2.1
	2400	1.4	3.9	3.2	8.6	8.2	36.9	17.6	7.2	2.5	2.2	0.4	0.4	0.0	0.4	1.8	5.4
	0300	4.0	7.4	2.3	5.4	6.5	20.9	14.2	11.3	3.6	8.0	3.1	3.5	1.2	1.3	1.9	5.3
	0600	4.3	6.7	1.7	5.7	7.0	18.9	14.5	13.0	4.6	6.6	3.1	4.6	1.2	1.1	1.4	5.5
	0900	5.6	7.3	3.9	8.1	9.1	17.4	9.9	8.9	3.8	5.7	2.8	3.6	1.2	1.5	2.8	8.5
AUTUMN	1200	5.8	7.3	3.9	6.5	4.7	10.7	7.2	9.3	4.8	6.7	4.0	4.8	2.7	4.3	5.8	11.4
	1500	4.2	5.0	1.8	3.9	3.3	10.4	7.1	13.7	7.3	11.3	5.0	6.4	3.4	4.8	4.8	7.6
	1800	3.8	3.9	1.8	4.4	3.8	10.7	10.9	16.8	9.1	12.6	3.8	4.5	1.7	2.6	2.9	6.8
	2100	5.4	5.4	2.8	5.5	3.0	17.7	13.5	13.6	6.6	10.2	3.4	3.2	1.1	1.1	1.1	6.3
	2400	4.0	4.0	2.8	4.8	7.2	26.9	11.2	11.6	5.6	5.2	4.4	0.4	1.2	0.8	2.8	6.8
	0300	7.4	7.4	2.1	3.8	3.3	8.6	5.7	7.3	3.9	10.7	6.7	10.3	2.9	3.1	3.7	13.2
	0600	5.4	8.6	1.8	4.0	4.3	10.1	3.8	6.5	3.4	10.6	6.4	11.7	3.6	3.5	3.5	12.7
	0900	7.0	9.0	2.4	5.0	5.3	8.2	4.2	6.1	4.0	8.7	6.6	8.5	3.9	4.3	4.2	12.6
WINTER	1200	6.4	6.0	2.5	4.4	2.9	5.6	4.1	6.2	4.2	9.2	5.2	9.9	3.5	7.0	8.7	14.3
	1500	4.4	4.5	1.5	2.8	1.8	5.2	3.5	7.1	6.6	10.2	7.0	11.3	5.0	8.1	8.1	12.8
	1800	5.5	4.7	1.4	2.6	1.8	6.0	5.5	9.4	5.2	13.0	6.8	10.6	3.7	5.3	6.1	12.4
	2100	8.4	6.1	2.2	4.3	1.8	8.7	6.1	7.7	5.9	11.5	6.4	8.0	3.7	4.1	2.6	12.5
	2400	7.5	4.4	3.5	4.1	6.0	9.4	6.3	9.4	5.3	8.8	6.9	7.2	1.9	1.9	4.7	12.6
	0300	5.4	6.8	2.3	5.5	5.2	17.7	11.4	13.7	6.1	10.8	3.6	3.3	0.4	0.8	1.5	5.6
	0600	4.5	7.8	3.2	6.7	5.5	16.2	10.8	13.2	6.0	9.5	3.8	4.1	1.4	1.5	0.8	5.2
	0900	7.8	8.9	4.6	8.0	5.2	10.9	8.3	9.8	6.2	8.4	3.2	3.2	1.0	1.8	2.4	10.2
SPRING	1200	6.1	5.9	2.5	3.4	2.6	6.6	6.1	10.8	7.7	10.5	4.7	6.1	2.9	5.0	5.7	13.3
	1500	5.0	3.4	1.9	2.3	1.1	5.4	6.0	11.1	9.9	14.6	6.0	8.3	2.9	6.8	5.7	9.7
	1800	4.5	4.1	0.9	2.9	1.6	6.0	7.4	14.7	10.6	18.0	5.4	6.2	1.6	3.6	3.4	9.2
	2100	7.1	4.7	2.2	4.4	2.5	12.3	8.6	12.8	11.3	17.2	3.7	2.6	0.7	0.7	1.4	7.7
	2400	5.5	3.7	2.9	6.1	7.5	19.9	8.6	13.3	7.2	8.6	2.6	2.6	1.2	0.6	0.6	9.2

TABLE 28

SOLAR RADIATION DATA FOR EACH SEASON FOR

SEVEN STATIONS

SOLAR RADIATION

Tables 28(a)-(d) give the mean daily total, the mean maximum intensity, the highest recorded intensity and the mean intensity of solar radiation for those stations where records are available.

The data were obtained from the Bureau of Meteorology as half hourly integrals of instantaneous solar radiation intensity and the total amount of radiation recorded each day.

From these figures the figures in Table 28 were obtained as follows:-

Mean Daily Total (kWh m^{-2})

The sum of the daily totals was divided by the number of days of record.

Mean Maximum Intensity (kW m^{-2})

The maximum reading each day was summed and divided by the number of days of record. The result was multiplied by 2 to allow for half-hourly readings and the result is an average intensity over a 30 minute period. Under certain meteorological conditions the instantaneous intensity can exceed this value by up to 50% for periods of a few minutes.

Highest Recorded Intensity (kW m^{-2})

The highest recorded half hourly reading was multiplied by 2.

Mean Intensity (kW m^{-2})

The sum of the daily totals was multiplied by 2 and divided by the total number of half hourly readings. This in effect approximates the mean intensity during daylight hours. The mean intensity over 24 hours would be approximately half this figure. Dividing the mean daily total by the mean intensity will give the mean number of hours of radiation per day.

T A B L E 28a

SOLAR RADIATION (SUMMER)

Mean Daily Total, Mean Daily Maximum Intensity, Highest Recorded Intensity and Mean Daily Intensity of Solar Radiation for Each Station

STATION	MEAN DAILY TOTAL kWh/m^2	MEAN MAX INTENSITY kW/m^2	HIGHEST RECORDED INTENSITY kW/m^2	MEAN INTENSITY kW/m^2
ALICE SPRINGS AERO.	7.20	1.04	1.27	0.53
DARWIN AERO.	5.62	0.95	1.22	0.43
MELBOURNE R.O.	6.29	0.91	1.16	0.44
PERTH (GUILDFORD)	7.48	1.02	1.19	0.54
WAGGA AERO.	7.25	1.00	1.21	0.51
WILLIAMTOWN AERO.	6.42	0.95	1.24	0.46
WOOMERA (A) M.O.	7.72	1.04	1.22	0.55

T A B L E 28b

SOLAR RADIATION (AUTUMN)

Mean Daily Total, Mean Daily Maximum Intensity, Highest Recorded Intensity and Mean Daily Intensity of Solar Radiation for Each Station

STATION	MEAN DAILY TOTAL kWh/m^2	MEAN MAX INTENSITY kW/m^2	HIGHEST RECORDED INTENSITY kW/m^2	MEAN INTENSITY kW/m^2
ALICE SPRINGS AERO.	5.70	0.86	1.21	0.48
DARWIN AERO.	5.53	0.89	1.23	0.45
MELBOURNE R.O.	3.12	0.56	0.98	0.27
PERTH (GUILDFORD)	4.50	0.72	0.99	0.38
WAGGA AERO.	4.08	0.68	1.07	0.35
WILLIAMTOWN AERO.	4.16	0.71	1.08	0.35
WOOMERA (A) M.O.	4.81	0.75	1.14	0.40

T A B L E 28c

SOLAR RADIATION (WINTER)

Mean Daily Total, Mean Daily Maximum Intensity, Highest Recorded Intensity and Mean Daily Intensity of Solar Radiation for Each Station

STATION	MEAN DAILY TOTAL kWh/m^2	MEAN MAX INTENSITY kW/m^2	HIGHEST RECORDED INTENSITY kW/m^2	MEAN INTENSITY kW/m^2
ALICE SPRINGS AERO.	4.61	0.74	0.95	0.41
DARWIN AERO.	5.51	0.83	0.97	0.46
MELBOURNE R.O.	1.95	0.41	0.70	0.19
PERTH (GUILDFORD)	2.75	0.53	0.79	0.26
WAGGA AERO.	2.54	0.49	0.84	0.24
WILLIAMTOWN AERO.	3.02	0.55	0.90	0.28
WOOMERA (A) M.O.	3.39	0.59	0.94	0.31

T A B L E 28d

SOLAR RADIATION (SPRING)

Mean Daily Total, Mean Daily Maximum Intensity, Highest Recorded Intensity and Mean Daily Intensity of Solar Radiation for Each Station

STATION	MEAN DAILY TOTAL kWh/m^2	MEAN MAX INTENSITY kW/m^2	HIGHEST RECORDED INTENSITY kW/m^2	MEAN INTENSITY kW/m^2
ALICE SPRINGS AERO.	6.77	0.99	1.24	0.52
DARWIN AERO.	6.49	0.99	1.25	0.50
MELBOURNE R.O.	4.65	0.76	1.14	0.35
PERTH	5.79	0.89	1.13	0.44
WAGGA AERO.	5.66	0.86	1.31	0.43
WILLIAMTOWN AERO.	5.37	0.84	1.20	0.41
WOOMERA (A) M.O.	6.37	0.91	1.18	0.49

TABLE 29

MEAN NUMBER OF DAYS WHEN VARIOUS METEOROLOGICAL CONDITIONS

HAVE BEEN EXPERIENCED AT EACH STATION

METEOROLOGICAL CONDITIONS

Tables 29(a)-(d) give the mean number of days per season on which the given meteorological condition has been recorded. Except for the number of raindays which were obtained from "Climatic Averages Australia - Metric Edition 1975", Bureau of Meteorology, the figures in Tables 29 were extracted from daily meteorological summaries.

The definitions of the meteorological conditions are:-

Haze	Visibility greater than 1 km and less than 10 km
Fog	Visibility less than 1 km
Dust	Visibility less than 1 km
Rainday	registered if more than 0.1 mm of rain fell
Strong Wind	10 minute average wind speed greater than 41 km/h
Gale	10 minute average wind speed greater than 63 km/h
Frost	Screen temperature below 2.2°C

Thunder, hail and snow are self evident

TABLE 29a

METEOROLOGICAL CONDITIONS (SUMMER)

Mean number of days per season when the given condition has been recorded for each station.

Station	Condition									
	HAIL	SNOW	THUNDER	FROST	DUST	HAZE	FOG	STRONG WIND	GALE	RAIN
ADELAIDE R.O.	0.14	0.0	3.6	0.0	0.23	43.3	0.05	4.7	0.50	14
ALICE SPRINGS AERO.	0.08	0.0	5.8	0.0	7.5	33.3	0.11	5.1	0.31	13
AMBERLEY AERO.	0.34	0.0	11.2	0.0	0.0	41.0	3.8	3.3	0.46	36
BROOME AERO.	0.08	0.0	17.4	0.0	0.22	26.8	0.17	3.4	0.72	26
CAIRNS AERO.	0.0	0.0	7.7	0.0	-	28.7	0.11	0.69	0.09	53
CANBERRA (A) M.O.	0.91	0.0	9.1	0.6	0.88	31.4	2.9	5.0	0.37	23
COCOS ISLAND	0.0	0.0	1.8	0.0	0.04	16.0	0.04	5.8	0.40	-
DARWIN AERO.	0.03	0.0	27.7	0.0	0.14	11.5	0.14	2.6	0.14	49
EAST SALE AERO.	0.15	0.0	5.4	0.2	0.21	62.8	10.8	13.0	1.1	28
KATHERINE P.O.	0.0	0.0	-	0.0	-	-	0.0	-	0.0	39
KIMBERLEY RESEARCH	0.17	0.0	29.8	0.0	-	20.3	0.25	2.6	0.17	37
MELBOURNE R.O.	0.64	0.0	4.1	0.0	0.0	55.0	0.59	2.3	0.09	27
ONSLOW AERO.	0.03	0.0	7.5	0.0	2.7	43.1	0.14	21.5	2.0	8
PERTH R.O.	0.06	0.0	2.1	0.0	0.09	57.2	0.86	7.3	0.17	10
RICHMOND AERO.	0.36	0.0	7.4	0.0	0.39	45.3	6.0	2.5	0.62	41
TOWNSVILLE AERO.	0.08	0.0	7.9	0.0	0.03	25.7	0.31	2.2	0.11	43
WAGGA AERO.	0.27	0.0	6.1	0.0	1.7	19.4	0.15	5.6	0.12	20
WILLIAMTOWN AERO.	0.34	0.0	8.9	2.5	0.38	58.6	5.4	4.4	0.38	36
WOOMERA (A) M.O.	0.07	0.0	3.4	0.0	1.2	14.0	0.21	11.7	0.61	8

TABLE 29b

METEOROLOGICAL CONDITIONS (AUTUMN)

Mean number of days per season when the given condition has been recorded for each station.

Station	Condition									
	HAIL	SNOW	THUNDER	FROST	DUST	HAZE	FOG	STRONG WIND	GALE	RAIN
ADELAIDE R.O.	0.77	0.0	2.3	0.23	0.14	52.9	0.55	3.8	0.50	27
ALICE SPRINGS AERO.	0.0	0.0	1.5	2.0	1.9	14.3	0.28	1.6	0.03	8
AMBERLEY AERO.	0.06	0.0	2.7	0.92	0.11	32.5	11.5	1.3	0.06	25
BROOME AERO.	0.0	0.0	5.8	0.0	0.06	17.4	2.0	1.8	0.17	13
CAIRNS AERO.	0.0	0.0	1.8	0.0	0.03	24.4	0.26	1.6	0.14	55
CANBERRA (A) M.O.	0.35	0.30	2.7	21.7	0.35	33.8	14.7	3.9	0.14	23
COCOS ISLAND	0.0	0.0	3.1	0.0	0.0	22.0	0.0	8.8	0.52	-
DARWIN AERO.	0.0	0.0	10.1	0.0	0.06	13.2	0.14	1.5	0.03	30
EAST SALE AERO.	0.21	0.0	1.8	4.7	0.03	60.2	22.5	11.2	0.88	36
KATHERINE P.O.	0.0	0.0	-	0.0	0.13	-	0.0	1.1	0.0	13
KIMBERLEY RESEARCH	0.0	0.0	8.3	0.0	0.08	18.2	0.17	1.8	0.0	12
MELBOURNE R.O.	0.55	0.0	2.0	0.0	0.09	63.2	4.3	3.2	0.23	35
ONSLOW AERO.	0.0	0.0	4.0	0.0	1.6	19.6	0.74	6.3	1.0	9
PERTH R.O.	0.26	0.0	3.8	0.38	0.14	60.8	3.5	6.4	0.66	26
RICHMOND AERO.	0.13	0.0	2.6	1.7	0.0	39.7	21.0	2.3	0.13	27
TOWNSVILLE AERO.	0.03	0.0	1.9	0.0	0.03	24.8	1.2	1.5	0.11	29
WAGGA AERO.	0.06	0.0	2.3	5.9	0.82	26.6	4.9	2.6	0.18	22
WILLIAMTOWN AERO.	0.07	0.0	3.5	1.5	0.24	54.4	10.4	6.4	0.48	33
WOOMERA (A) M.O.	0.0	0.0	1.4	0.15	0.46	9.9	1.3	5.8	0.25	11

TABLE 29c

METEOROLOGICAL CONDITIONS (WINTER)

Mean number of days per season when the given condition has been recorded for each station.

Station	Condition									
	HAIL	SNOW	THUNDER	FROST	DUST	HAZE	FOG	STRONG WIND	GALE	RAIN
ADELAIDE R.O.	1.5	0.0	1.5	2.6	0.14	63.0	2.9	5.8	0.82	47
ALICE SPRINGS AERO.	0.03	0.0	0.64	25.5	1.2	10.7	0.81	1.6	0.08	8
AMBERLEY AERO.	0.06	0.0	1.1	13.2	0.11	32.4	13.7	1.2	0.06	18
BROOME AERO.	0.0	0.0	0.10	0.0	0.22	18.9	9.5	1.7	0.0	5
CAIRNS AERO.	0.0	0.0	0.03	0.0	0.11	33.1	0.31	1.1	0.0	28
CANBERRA (A) M.O.	1.0	1.5	1.1	59.5	0.05	31.6	19.8	8.2	0.45	32
COCOS ISLAND	0.0	0.0	0.56	0.0	0.04	24.6	0.04	21.3	0.04	-
DARWIN AERO.	0.0	0.0	0.06	0.0	0.11	43.5	1.5	0.70	0.0	2
EAST SALE AERO.	0.53	0.09	0.32	29.1	0.0	52.9	22.2	13.8	1.6	45
KATHERINE P.O.	0.0	0.0	-	-	-	-	0.13	1.3	0.0	0
KIMBERLEY RESEARCH	0.0	0.0	0.17	0.0	0.0	44.9	0.17	2.0	0.0	0
MELBOURNE R.O.	1.4	0.05	0.82	1.9	0.05	57.7	8.4	5.6	0.27	45
ONSLOW AERO.	0.0	0.0	0.15	0.0	1.5	13.5	0.99	7.5	0.09	10
PERTH R.O.	1.5	0.0	4.8	0.08	0.03	51.9	3.8	9.5	2.0	52
RICHMOND AERO.	0.07	0.0	0.93	23.3	0.20	32.3	20.5	5.0	0.60	23
TOWNSVILLE AERO.	0.0	0.0	0.08	0.0	0.06	32.2	6.5	1.5	0.06	10
WAGGA AERO.	0.85	0.24	1.1	35.6	0.06	24.1	16.7	4.3	0.21	32
WILLIAMTOWN AERO.	0.17	0.0	2.0	4.3	0.07	44.2	8.9	13.7	2.3	32
WOOMERA (A) M.O.	0.14	0.0	1.1	3.1	0.07	12.3	2.4	7.7	0.29	17

TABLE 29d

METEOROLOGICAL CONDITIONS (SPRING)

Mean number of days per season when the given condition has been recorded for each station.

Station	Condition									
	HAIL	SNOW	THUNDER	FROST	DUST	HAZE	FOG	STRONG WIND	GALE	RAIN
ADELAIDE R.O.	1.7	0.0	3.7	1.5	0.14	48.5	0.50	8.7	1.4	32
ALICE SPRINGS AERO.	0.28	0.0	5.9	0.77	6.6	28.6	0.28	6.0	0.36	11
AMBERLEY AERO.	0.36	0.0	7.9	0.62	0.25	55.6	12.3	2.1	0.06	26
BROOME AERO.	0.03	0.0	1.9	0.0	0.36	37.0	5.4	1.1	0.03	3
CAIRNS AERO.	0.14	0.0	1.9	0.0	0.09	46.8	0.23	1.1	0.0	25
CANBERRA (A) M.O.	2.0	0.54	6.2	23.0	0.45	28.3	8.7	9.5	0.39	31
COCOS ISLAND	0.0	0.0	0.08	0.0	0.0	24.0	0.0	15.5	0.16	-
DARWIN AERO.	0.03	0.0	12.0	0.0	0.17	37.0	0.28	0.75	0.03	20
EAST SALE AERO.	0.68	0.03	2.9	6.9	0.18	58.2	15.8	17.5	1.9	44
KATHERINE P.O.	0.0	0.0	2.1	0.0	0.25	-	0.0	1.0	0.13	11
KIMBERLEY RESEARCH	0.25	0.0	9.9	0.0	0.08	48.5	0.08	1.7	0.17	12
MELBOURNE R.O.	1.6	0.0	3.2	0.0	0.09	50.5	1.7	6.2	0.32	41
ONSLOW AERO.	0.0	0.0	0.55	0.0	2.8	38.0	0.61	17.0	0.26	2
PERTH R.O.	0.69	0.0	2.2	0.0	0.0	54.4	2.1	6.1	1.0	31
RICHMOND AERO.	0.23	0.0	6.3	1.5	0.77	42.3	12.6	6.6	0.43	32
TOWNSVILLE AERO.	0.06	0.0	2.7	0.0	0.14	42.1	1.8	1.7	0.0	13
WAGGA AERO.	0.91	0.03	5.5	12.7	1.0	21.0	5.5	6.8	0.48	30
WILLIAMTOWN AERO.	0.31	0.0	6.9	2.6	0.45	56.9	7.0	11.4	1.2	31
WOOMERA (A) M.O.	0.11	0.0	3.5	0.0	9.4	15.7	0.18	15.9	1.5	13

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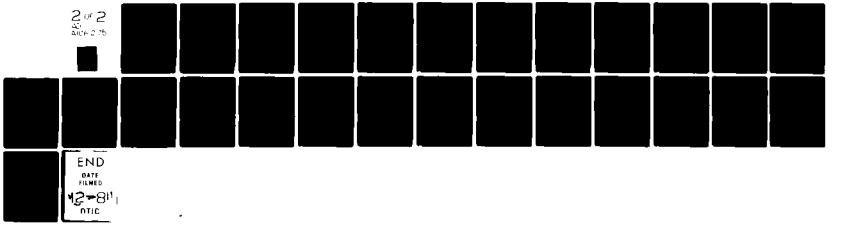

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ANNEX A

AIR FORCE RESEARCH REQUEST 10/76

ENVIRONMENTAL CONDITIONS FOR RAAF EQUIPMENT

AIR FORCE RESEARCH REQUIREMENT 10/76

ENVIRONMENTAL CONDITIONS FOR RAAF EQUIPMENT

Introduction

1. The RAAF has experienced many aircraft and equipment problems which were caused in toto or in part by the environmental conditions in the areas in which the RAAF has operated. These problems have manifested themselves in such forms as corrosion, physical deterioration, material reversions and conversions, contamination, and insidious property change, or by a reduction in performance to an unacceptable level. Factors such as temperature, humidity, solar radiation, precipitation, etc., either singularly or in combination play some causal part in these problems. But these problems usually occur when the equipment or material is operated or used in an environment outside its design limitations.

2. The solution, therefore in many cases lies with the ability to specify the ground level environmental conditions in which RAAF equipment is intended to operate so that the relevant factors will be taken into account in the design and the selection of materials or the development of protective measures. If the foreseen ground level environmental conditions are not specified the designer or manufacturer cannot guarantee acceptable performance, safety and service life. The converse is also true in that, unless the intended environmental conditions are known, the evaluation for suitability of "off the shelf" equipment cannot be effectively completed. The RAAF therefore has a requirement for a document, to form part of a revised DEF(AUST) 168, to be used as the basis for specifying ground level environmental conditions that will apply to Service equipment in its foreseen role, and its storage.

Object

3. Assistance is required in the gathering and processing of environmental information pertinent to the Australia continent and its environs and the reduction of this information into a form which will allow its selective use.

Requirements

4. Details of the task requirements are given in the following paragraphs.

5. Task Terms of Reference. The task terms of reference are:

(a) To ascertain and define the standard Australian atmosphere and to detail divergencies from that standard at the following locations:

(1) Darwin area,

(2) Cocos Island area,

(3) Tindall area,

(4) Learmonth area,

(5) Kimberleys area,

(6) Townsville area,

(7) Cairns area,

(8) Amberley area,

(9) Richmond area (including Williamtown),

(10) Canberra area (including Wagga),

(11) Melbourne area (including East Sale),

(12) Adelaide area,

(13) Woomera area,

(14) Alice Springs area,

(15) Perth area,

(16) Snowy Mountains area of NSW/VIC; and

(17) Other locations within the Australian area of interest as determined by the strategic basis.

(b) To ascertain and define the following climatic factors at those areas given in sub-para a.

(1) ground level air temperature extremes and average maximums and the minimums for the four seasons;

(2) ground level absolute humidity and dew point extremes and average maximums and minimums for the four seasons;

(3) precipitation types, rate and quantity extremes;

(4) wind speed extremes and averages for the four seasons;

(5) average wind direction on a diural and seasonal basis;

(6) likelihood by type and the level of wind borne hazards such as sand and dust on a seasonal basis;

(7) mean quantity and mean and maximum daily intensity of solar radiation for the four seasons;

(8) the incidence of corrosive chemicals such as salt or industrial fallout.

(c) To collate the gathered data into a form which will simplify its utilization and allow its ready reference from other documents.

(d) To consider and report on the extent to which the following man made or induced conditions could be specified in DEF(AUST) 168.

(1) Noise, vibration and shock;

(2) Electromagnetic radiation - thermal to ultra violet and perhaps above;

(3) Ambient conditions in elementary storage, containers, sheds etc; and

(4) Contaminants, principally fluids such as hydraulic oils and cleansers, but also gases and solids such as propellant residue, aerosols, industrial fogs etc.

6. Operational Relevance and Urgency. The results of this task need to be applied at the earliest opportunity and whenever RAAF equipment requirements need to be stated. The nonavailability of environmental details could cause the RAAF to over or under specify its requirements and thus unnecessarily increase costs or allow unsuitable equipment to be put into service.

7. Data Source and Availability. Much of the required basic data should be available either from the work done to date against RD71 67/3 or from the

Bureau of Meterology. Reference should also be made to the work done by WRE against the Karinga project and by ARDU in deriving a RAAF Atmospheric Environment. The RD70 draft task description sent to ECADSS requesting proposal of a program for the development of a GUST model of the Australian atmosphere may also have relevance to this task.

8. Possible Subdivision of the Task. The more important environmental conditions of concern are those related to the hot/dry and hot/wet areas and work in these areas should be afforded the higher priority.

Documentation

9. The results of the task should be presented in a manner suitable for immediate inclusion in DEF(AUST) 168. However, interim or progress reports are required to enable the Air Force to utilize any available data and to ascertain task progress.

Security

10. All aspects of this task are unclassified.

Target Date

11. The desired target date for completion of the task is December 1976. However, as indicated in paragraph 8 usable interim environmental data on hot/wet and hot/dry areas are needed at the earliest possible time.

Task Management

12. This task is basically directed towards meeting an engineering requirement but the results will have wide application throughout the RAAF. Service requirements are being co-ordinated by CAFTS Branch with DTP acting as the Project Director.

ANNEX B

DETERMINATION OF EXTREME VALUES

The theory of extreme values has been widely used for the prediction of the intensities of meteorological events that occur infrequently [1,2].

The values estimated in this report were obtained using the equation of Jenkinson [3].

$$x = x_o + \frac{\alpha}{k} (1-e^{-ky}) \qquad (1)$$

where x is the value of a variable expected to occur once in a return period T years and

$$y = - \ln [\ln \{T/(T-1)\}]$$

The values of x_o, α and k that gave the best fit to the recorded data were determined by both a weighted least squares fit and by the method of Maximum Likelyhood [2]. These results obtained by both methods were similar and the figures quoted on the various tables are those obtained from a least squares fit weighted by a factor 1/w (1) where

$$w = \pi^2/6 + 1.14 (y-\gamma)\pi/\sqrt{6} + 1.1(y-\gamma)^2$$

$$\gamma = 0.5772$$

REFERENCES

1. Gumbel, E.J., "Statistics of Extremes", 1958 Columbia University Press, N.Y.

2. W.M.O. Tech. Note 98, "Estimation of Maximum Floods", 1969 Chap. 5.

3. Jenkinson, A.F. (1955). "The Frequency Distribution of the Annual Maximum (or Minimum) Values of Meteorological Elements", Quart. J. Roy. Meteor. Soc. 87, 158.

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Broome (Cont.)				
	Rainfall	Extreme Daily	24(c)	45
		Extreme Hourly	24(d)	46
		Extreme Monthly	24(b)	44
		Extreme Six Minute	24(e)	47
		Seasonal	5	7
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	Elevation		1	2
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	Rainfall	Extreme Annual	24(a)	43
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		Extreme Monthly	24(b)	44
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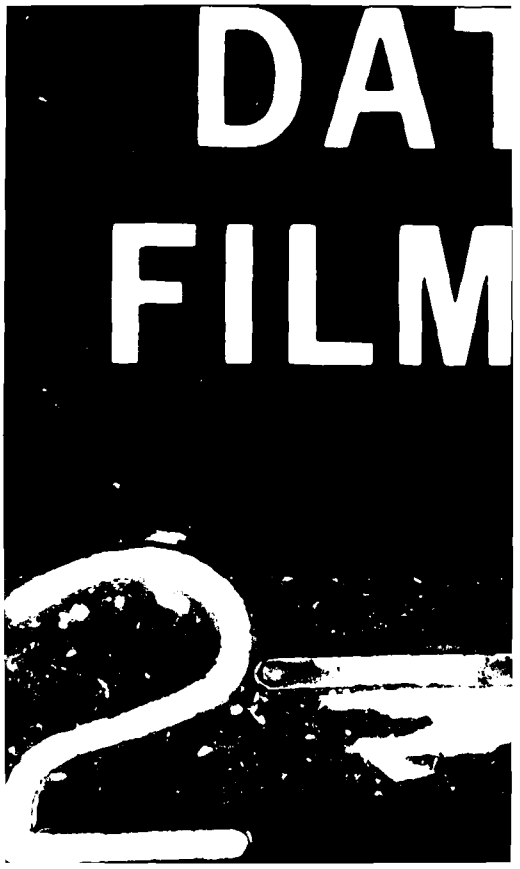
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